Iran Endocrine Society | Research Insititute for Endocrine Sciences | Shahid Beheshti University of Medical Sciences | Iran University of Medical Sciences | Institute of Endocrinology and Metabolism

THE 14th INTERNATIONAL CONGRESS OF

ENDOCRINE DISORDERS

Shahid Beheshti Convention Center

November 22nd-24th, 2023

Abstract Book

Iran Endocrine Society | Research Insititute for Endocrine Sciences | Shahid Beheshti University of Medical Sciences | Iran University of Medical Sciences | Institute of Endocrinology and Metabolism

Topics

1. Thyroid Disorders
2. Diabetes Mellitus
3. Dyslipidemia
4. Pituitary Disorders
5. Adrenal Disorders
6. Reproductive Endocrinology
7. Osteoporosis & Metabolic Bone Disorders
8. Obesity
9. Precision Medicine

Secretariat: Hamayesh Sazan Novin (HSN) Conference Management Services.
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Postal Code: 1419616174 Email: info@14iced2023.ir

Scientific program of the 14th ICED in Iran

Welcome Message

In the name of god

Dear Colleagues

In behalf of Iran Endocrine Society (IES), it is my great leasureto invite you to participae in the 14th International Congress on Endocrine Disorders (ICED) will be held from November 22-24, 2023 in Tehran, Islamic Republic of Iran.

This congress is organized by the Iran Endocrine Society with co-operation of scientific Asian, European and USA endocrine societies. This congress will provide you with a forum for the exchange of ideas and valuable information on the latest developments in the field of endocrinology. On behalf of the Organizing Committee it gives me great pleasure to extend an invitation to all our colleagues around the world interested in the field of endocrinology and metabolism and welcome you to participate and submit abstracts which can be accepted as oral papers or posters.

We wish to make the 14th ICED a memorable event in terms of science, social activities and personal friendship. Looking forward to seeing you in Tehran.

Fereidoun Azizi, M.D.
President, Iran Endocrine Society

Scientific program of the 14th ICED in Iran

Welcome Message

Dear colleagues

It is my great pleasure and honor to announce that the 14th International Congress on Endocrine Disorders and Metabolism (ICED) will be held over a period of three days on November 22nd-24th, 2023 in Tehran.

The congress provides national, regional, and global experts with a unique opportunity to present their academic achievements and to get engaged in an exchange of cutting-edge information on a range of topics in basic and clinical Endocrinology and Metabolism. The plenary lectures, case discussions, and symposiums update practicing physicians and researchers on the newest diagnostic and therapeutic approaches in management of endocrine disorders. The scientific program covers new advancements in the field of Endocrinology & Metabolism through presentation of the edge of science topics on thyroid disorders, diabetes, obesity, pituitary tumors, osteoporosis, and adrenal disorders.

The congress welcomes clinical endocrinologists, internal medicine specialists, as well as researchers and scientists involved in a wide range of related clinical and basic science disciplines including but not limited to cardiology, nuclear medicine, pathology, genetics, molecular medicine, biotechnology, bioinformatics, and nutrition.

The scientific committee at ICED is actively seeking input from those whose work and ideas can assist in further development of endocrine research and practice. We hope that scientific interactions and exchange of ideas will pave the way for future advances in the ever-changing field of Endocrinology and Metabolism. We look forward to setting the stage for a productive meeting with your support and to welcoming you all to Tehran.

Mohammad E. Khamseh, MD
Scientific Secretary of Congress

Scientific program of the 14th ICED in Iran

History of the International Congress of Endocrine Disorders 1990-2023 Tehran, Iran

First International Congress of Endocrine Disorders	1-5	September	1990
Second International Congress of Endocrine Disorders	12-14	May	1992
Third International Congress of Endocrine Disorders	4-8	September	1995
Forth International Congress of Endocrine Disorders	20-22	November	1996
Fifth International Congress of Endocrine Disorder	6-9	September	1998
Sixth International Congress of Endocrine Disorders	6-9	October	2001
Seventh International Congress of Endocrine Disorders	8-11	October	2004
Eighth International Congress of Endocrine Disorders	27-30	October	2009
Ninth International Congress of Endocrine Disorders	15-18	November	2011
Tenth International Congress of Endocrine Disorders	22-24	October	2014
Eleventh International Congress of Endocrine Disorders	2-4	November	2016
Twelfth International Congress of Endocrine Disorders	14-16	November	2018
Thirteenth International Congress of Endocrine Disorders	10-12	November	2021
Fourteenth International Congress of Endocrine Disorders	22-24	November	2023

Scientific program of the 14th ICED in Iran

Members of Scientific Committee

Scientific Secretary

Mohammad E. Khamseh, MD

Scientific Planning Committee

Afkhami Mohammad
Amouzegar Atieh
Esfahanian Fatemeh
Esteghamati Alireza
Hadaegh Farzad
Hosseinpanah Farhad
Jahed Adel
Mohajeri Tehrani Mohammadreza
Mousavi Zohreh
Nakhjavani Manouchehr
Pakdel Farzad
Ramezani Tehrani
Rezvanian Hassan

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AAlaa Maryam, MD
Abdi Hengameh, MD
Aghaei Hamid, MD
Akbarzadeh Mahdi, PhD
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Amini Mohammad Reza, MD
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Maghsoomi Zohreh, MD
Malek Mojtaba, MD
Mehran Ladan, MD
Mehrdad Mojtaba
Mellati Ali Mohammad, MD
Mirmiran Parvin, MD
Moazam Maryam, MD
Molavi Behnam, MD
Momenan Amir Abbas, MD
Nabipour Iraj, MD
Nazari Mahboubeh, MD
Rajabian Reza, MD
Ramezani Majid, MD
Razzaghi Azar Marayam, MD
Saadat Navid, MD
Sanjari Mojgan, MD
Sarvghadi Farzaneh, MD
Sharghi Sasan, MD
Soheilipour Fahimeh, MD
Soltani Akbar, MD
Tohidi Maryam, MD
Valizadeh Majid, MD
Zadeh Vakili Azita, PhD

Members of Program Organizing Committee

Executive secretary

Mohammad Hashemi, MD.

Executive committee

Atri Mohamad Reza
Akbari Abolfazl
Alaei Fariba, MD
Asadi Omolbanin, MD
Balouchi Reza
Emami Zahra, MD
Eskandari Mohammad Reza
Fakhimi Tahereh
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Mohamadi Elyad
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Executive Manager

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Derakhshanfar Najla
Khosro Aghaei Parham
Nasiri Sanaz
Razandi Vahid
Safarpour Vahideh

Scientific program of the 14th ICED in Iran

Members of International Scientific Committee

Sarita Bajaj
South Asian Federation of Endocrine Societies
India

Peter Dolman
University of British Columbia (UBC)
Canada

Ralph DeFronzo
University of Texa
USA

Hossein Gharib
Past President American Thyroid Association
USA

Yashdeep Gupta
AIIMS New Delhi
India

Bahram Jafar Mohammadi
John Radcliffe Hospitals, Oxford
England

Sanjay Kalra
President elect, South Asian Federation of Endocrine Societies
India

Nitin Kapoor
CMC Vellore
India

Michael Lewiecki
UNM Health Sciences Center
USA

Don McLeod
University of Queensland
Australia

Syed Abbas Raza
President, International Society of Endocrinology
Pakistan

Douglas Ross
Harvard Medical school
USA

Salman Razvi
Newcastle University
England

Peter Schwarz
Chairmen of the German workgroup of diabetes prevention
Germany

Rakesh Kumar Sahay
Osmania Medical College, Hyderabad
India

Shehla Shaikh
Saifee Hospital and Reliance Hospital Mumbai
India

Michael Tuttle
Cornell University
USA

Awards Presentations

1) The Ibn-Sina or AVICENNA AWARD

Established in 2006, The AVICENNA AWARD recognizes outstanding contributer to research and education on the Endocrinology, Metabolism and related subjects in the last three years.

2006

Fereidoon Azizi

2009

Bagher Laridjani

2011

Alireza Esteghamati

2014

Roya Kelishadi

Farzad Hadaegh

2016

Manouchehr Nakhjevani

Mehdi Hedayati

2018

Iraj Nabipour

Parvin Mirmiran

2021

Mohammad E. Khamseh

Fahimeh Ramezan Tehrani

2) RAZES AWARD

Established in 2006, the RAZES AWARD recognizes distinguished investigators in the field of Endocrinology, Metabolism and related subjects, who is not older than the age of 45 in the year of award.

2006

Masaaki Imaba

2009

Farhad Hosseinpanah

2011

Asghar Ghasemi

2014

Mohammad Reza Bozorgmanesh

2016

Mostafa Ghorbani

2018

Atieh Amouzegar

2021

Hanieh-Sadat Ejtahed

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Program At a Glance

Scientific program of the 14th ICED in Iran

Time	Type	Title	Speaker(s)	Moderator(s)	Hall
Wednesday Nov. 22					
7:30 - 9:00 Opening Ceremony		Opening Ceremony			Main
9:00 – 9:30 Plenary Lecture 1		Critical thinking in endocrine sciences	Akbar Soltani	Reza Rajabian, Ali Mohammad Mellati, Manouchehr Jazayeri, Navid Saadat	Main
9:30 – 10:00 Plenary Lecture 2		Precision Endocrinology	Nitin Kapoor		Main
10:00–10:30 Plenary Lecture 3		Cell Therapy in Endocrine Disorders	Bagher Larijani		Main
10:30 – 11:00		Break			
11:00 – 12:30	Symposium 1	Pituitary Neuroendocrine Tumors	Majid Valizadeh Nahid Hashemimadani Bahram Jafar Mohammadi	Mohammad Ebrahim Khamseh	Main Hall
	Symposium 2	Gestational Diabetes Mellitus	Samira Behboudi Fahimeh Ramezani Tehrani Fahimeh Soheilipour Yashdeep Gupta	Fahimeh Ramezani Tehrani	Allameh
12:30 – 13:30		Prayer & Lunch			
13:30 – 15:00	Symposium 3	Management of Hypothyroidism	Salman Razvi Jacqueline Jonklaas Ladan Mehran	Atieh Amouzegar	Allameh
	Symposium 4	Diabetic Foot	Neda Alijani Behnam Molavi Mahboubeh Nazari Mohammad Reza Amini, Maryam AAlaa	Mohammadreza Mohajeri Tehrani Panel: Sasan Sharghi, Mohsen Khoshniat	Kharazmi
15:00 – 17:00	Panel 1	Oral Presentations		Azita Zadeh Vakili, Davood Khalili	Allameh

Scientific program of the 14th ICED in Iran

Time	Type	Title	Speaker(s)	Moderator(s)	Hall
Thursday Nov. 23					
8:00-8:30 Plenary Lecture4		Nuances of Thyroidology : merging science with art	Sarita Bajaj	Javad Behjati, Mohammad Ebrahim Khamseh	Main
8:30 – 10:00	Symposium 5	Diabetes Management	Alireza Esteghamati Peter Schwarz Ralph Defronzo Shehla Shaikh	Alireza Esteghamati	Main Hall
	Symposium 6	Adrenal Disorders	Mojgan Sanjari Marayam Razzaghi Azar Rakesh Sahay Amir Bahrami	Hassan Rezvanian	Allameh
10:00 – 10:30		Break			
10:30-11:00 Plenary Lecture5		The Digital Twin in Clinical Endocrinology	Iraj Nabipour	Manouchehr Nakhjavani, Saeid Kalantari, Majid Ramezani	Main
11:00-11:30 Plenary Lecture6		Person Centric Management of Obesity: Barophenotype characterization	Sanjay Karla		Main
11:30-12:00 Plenary Lecture7		Challenges in managing Diabetes	Syed Abbas Raza		Main
12:00 – 13:00		Prayer & Lunch			
13:00 – 14:00		Iran Endocrine Society - General assembly Allameh Hall			
14:00 – 15:30	Symposium 7	Treatment of Hyperthyroidism	Douglas Ross Fereidoun Azizi	Manouchehr Nakhjavani	Allameh
	Symposium 8	Diabetes and Technology	Adel Jahed Hamid Aghaei Mojtaba Malek	Adel Jahed	Kharazmi

Scientific program of the 14th ICED in Iran

Time	Type	Title	Speaker(s)	Moderator(s)	Hall
Thursday Nov. 23					
15:30 – 17:00	Symposium 9	**Precision Medicine**	Maryam Daneshpour Sara Asgarian Maryam Moazam Mahdi Akbarzadeh Hossein Lanjanian	**Maryam Daneshpour**	Allameh
15:30 – 17:00	Panel 2	**Oral Presentations**	Sima Nazarpour Laily Najafi Farzad Najafipour	**Mohammad Ebrahim Khamseh. Zohreh Mousavi, Hossein Dabbaghmanesh**	Kharazmi

Time	Type	Title	Speaker(s)	Moderator(s)	Hall
Friday Nov. 24					
8:30 – 10:00	Symposium 10	**Osteoporosis: Diagnostic Pitfalls & Management**	Hossein Dabbaghmanesh Mike Lewiecki Mojtaba Mehrdad	**Farhad Hosseinpanah**	Allameh
	Symposium 11	**Management of Thyroid Cancer**	Mehdi Hedayati Michael Tuttle Hossein Gharib Donald McLeod	**Zohreh Mousavi**	Kharazmi
	Symposium 12	**Obesity Symposium**	Mohammad Afkhami Ozra Akha Farzaneh Sarvghadi Hajieh Bibi Shahbazian	**Mohammad Afkhami**	Parvin
10:00 – 10:30		**Break**			
10:30 – 12:00	Symposium 12	**Cardiorenal Protection in T2DM**	Bijan Iraj Hengameh Abdi Zohreh Maghsoomi Reza Ghanavati	**Farzad Hadaegh**	Allameh
	Symposium14	**Thyroid Eye Disease**	Peter Dolman Farzad Pakdel Fatemeh Esfahanian	**Farzad Pakdel**	Farzad Pakdel

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Wednesday Nov. 22

Scientific program of the 14th ICED in Iran

Time	Type	Title	Speaker	Hall
Wednesday Nov. 22				
7:30 - 9:00 **Opening Ceremony**		Younes Panahi; Vice Chancellor of Research and Technology; Ministry of Health Alireza Zali; Chancellor, Shahid Beheshti University of Medical Sciences		**Main Hall**
Plenary Lectures **Chairs: Reza Rajabian, Ali Mohammad Mellati, Manouchehr Jazayeri, Navid Saadat**				
9:00 – 9:30 **Plenary Lecture 1**		**Critical thinking in endocrine sciences**	Akbar Soltani	**Main**
9:30 – 10:00 **Plenary Lecture 2**		**Precision Endocrinology**	Nitin Kapoor	**Main**
10:00–10:30 **Plenary Lecture 3**		**Cell Therapy in Endocrine Disorders**	Bagher Larijani	**Main**
10:30 – 11:00		**Break**		
11:00 – 12:30	**Symposium 1**	**Pituitary Neuroendocrine Tumors** Mohammad Ebrahim Khamseh		**Main Hall**
		Pitfalls in diagnosis and treatment of Cushings' disease	Majid Valizadeh	
		New horizon in medical management of Acromegaly	Nahid Hashemimadani	
		Aggressive Prolactinoma	Bahram Jafar Mohammadi	
	Symposium 2	**Gestational Diabetes Mellitus** Fahimeh Ramezani Tehrani		**Allameh**
		GDM screening & risk factors: National evidence	Samira Behboudi	
		Oral antidiabetic agents in GDM management	Fahimeh Ramezani Tehrani	
		Neonatal and long term outcomes of children of mothers with GDM	Fahimeh Soheilipour	
		Management of diabetes in pregnancy	Yashdeep Gupta	

Scientific program of the 14th ICED in Iran

Time	Type	Title	Speaker	Hall
Wednesday Nov. 22				
12:30 – 13:30		**Prayer & Lunch**		
13:30 – 15:00	**Symposium 3**	**Management of Hypothyroidism** Atieh Amouzegar		**Allameh**
		Hypothyroidism: Advances in diagnosis, screening and prevention	Salman Razvi	
		Progress in the management of hypothyroidism	Jacqueline Jonklaas	
		Combination treatment of hypothyroidism with levothyroxine plus Liothyronine	Ladan Mehran	
	Symposium 4	**Diabetic Foot** Moderator: Mohammadreza Mohajeri Tehrani Panel: Sasan Sharghi, Mohsen Khoshniat		**Kharazmi**
		Approach to infection in diabetic foot ulcer	Neda Alijani	
		Approach to vascular problems in diabetic foot ulcer	Behnam Molavi	
		Epidermal and platelet derived growth factors in diabetic foot ulcer	Mahboubeh Nazari	
		Case discussion: complicated diabetic foot ulcer	Mohammad Reza Amini, Maryam AAlaa	
15:00 – 17:00	**Panel 1**	**Oral Presentations** Moderator: Azita Zadeh Vakili, Davood Khalili		**Allameh**

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Thursday Nov. 23

Scientific program of the 14th ICED in Iran

Time	Type	Title	Speaker	Hall
Thursday Nov. 23				
Plenary Lecture **Chair: Javad Behjati, Mohammad Ebrahim Khamseh**				
8:00-8:30 **Plenary Lecture4**		**Nuances of Thyroidology : merging science with art**	**Sarita Bajaj**	**Main**
8:30 – 10:00	**Symposium 5**	**Diabetes Management** **Moderator: Alireza Esteghamati**		**Main Hall**
		Twincretins and triple G Drugs in management of diabetes	Alireza Esteghamati	
		IDF initiatives	Peter Schwarz	
		Current management of newly diagnosed T2DM	Ralph Defronzo	
		Ramadan & diabetes	Shehla Shaikh	
	Symposium 6	**Adrenal Disorders** **Moderator: Hassan Rezvanian**		**Allameh**
		Adrenal Insufficiency in adults : diagnosis & management	Mojgan Sanjari	
		Nonclassical congenital adrenal hyperplasia	Marayam Razzaghi Azar	
		Steroid stewardship	Rakesh Sahay	
		Adrenal incidentaloma	Amir Bahrami	
10:00 – 10:30		**Break**		
Plenary Lectures Chairs: Manouchehr Nakhjavani, Saeid Kalantari, Majid Ramezani				
10:30-11:00 **Plenary Lecture5**		**The Digital Twin in Clinical Endocrinology**	**Iraj Nabipour**	**Main**
11:00-11:30 **Plenary Lecture6**		**Person Centric Management of Obesity: Barophenotype characterization**	**Sanjay Karla**	**Main**
11:30-12:00 **Plenary Lecture7**		**Challenges in managing Diabetes**	**Syed Abbas Raza**	**Main**
12:00 – 13:00		**Prayer & Lunch**		
13:00 – 14:00		**Iran Endocrine Society - General assembly** **Allameh Hall**		

Scientific program of the 14th ICED in Iran

Time	Type	Title	Speaker	Hall
Thursday Nov. 23				
14:00 – 15:30	Symposium 7	**Treatment of Hyperthyroidism** **Moderator: Manouchehr Nakhjavani**		Allameh
		Treatment of hyperthyroidism: past and present	Douglas Ross	
		Practical hints for long-term anti-thyroid drug treatment	Fereidoun Azizi	
	Symposium 8	**Diabetes and Technology** **Moderator: Adel Jahed**		Kharazmi
		Continuous glucose monitoring: recent advancements	Adel Jahed	
		Insulin delivery systems	Hamid Aghaei	
		CGM in people with T2DM	Mojtaba Malek	
15:30 – 17:00	Symposium 9	**Precision Medicine** **Moderator: Maryam Daneshpour**		Allameh
		Precision Medicine and How to Establish in Iran: Diabetes as an example	Maryam Daneshpour	
		Genetic of Maturity onset diabetes mellitus in young (MODY) in TCGS	Sara Asgarian	
		The Genetic risk score of type 1 diabetes in TCGS	Maryam Moazam	
		Genome-wide association of type 2 diabetes in TCGS	Mahdi Akbarzadeh	
		The Role of Artificial Intelligence in Precision Medicine	Hossein Lanjanian	
15:30 – 17:00	Panel 2	**Oral Presentations** **Moderator: Mohammad Ebrahim Khamseh. Zohreh Mousavi, Hossein Dabbaghmanesh**		Kharazmi

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Friday Nov. 24

Scientific program of the 14th ICED in Iran

Time	Type	Title	Speaker	Hall
Friday Nov. 24				
8:30 – 10:00	Symposium10	**Osteoporosis: Diagnostic Pitfalls & Management** **Moderator: Farhad Hosseinpanah**		Allameh
		Risk stratification	Hossein Dabbaghmanesh	
		Sequential therapy in Osteoporosis	Mike Lewiecki	
		Diabetes and osteoporosis	Mojtaba Mehrdad	
	Symposium11	**Management of Thyroid Cancer** **Moderator: Zohreh Mousavi**		Kharazmi
		Thyroid Cancer: integrating basic science & clinical practice	Mehdi Hedayati	
		Active surveillance for managing papillary thyroid cancer	Michael Tuttle	
		Management of local neck recurrence of thyroid cancer	Hossein Gharib	
		Health related quality of life in patients with thyroid cancer	Donald McLeod	
	Symposium12	**Obesity Symposium** **Moderator: Mohammad Afkhami**		Parvin
		Epidemiology and diagnosis	Mohammad Afkhami	
		Oral anti-obesity medications	Ozra Akha	
		GLP-1 RA in treatment of obesity	Farzaneh Sarvghadi	
		Dual & triple Agonists	Hajieh Bibi Shahbazian	
10:00 – 10:30		**Break**		
10:30 – 12:00	Symposium13	**Cardiorenal Protection in T2DM** **Moderator: Farzad Hadaegh**		Allameh
		Hypertension management in people with T2DM	Bijan Iraj	
		Lipid management: Treat to target vs. high intensity	Hengameh Abdi	

Scientific program of the 14th ICED in Iran

Time	Type	Title	Speaker	Hall
Friday Nov. 24				
		Diabetic kidney disease and cardiovascular outcomes	Zohreh Maghsoomi	
		Heart failure management in people with T2DM	Reza Ghanavati	
	Symposium14	**Thyroid Eye Disease Moderator: Farzad Pakdel**		Kharazmi
		Clinical features and classification of TED	Peter Dolman	
		Pearls and pitfalls in management of TED	Farzad Pakdel	
		Management of hyperthyroidism in patients with TED (Positioning of iodine ablation therapy vs surgical ablation)	Fatemeh Esfahanian	

14th ICED Meeting Sponsors

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Exhibitors Profile

Companies represented in the exhibition (alphabetical order)

- ABBA DAROU TEB
- ACTOVERCO
- AVAN
- AVIN DAROU
- BEHESTAN DAROU(AMGEN)
- CEDAL PERSIA
- CINNAGEN
- DAANA PHARMA
- DARMANYAB DAROU
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- DR. ABIDIPHARMACEUTICALS
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- FARIR ASA TEB
- KOUSHAN PHARMED
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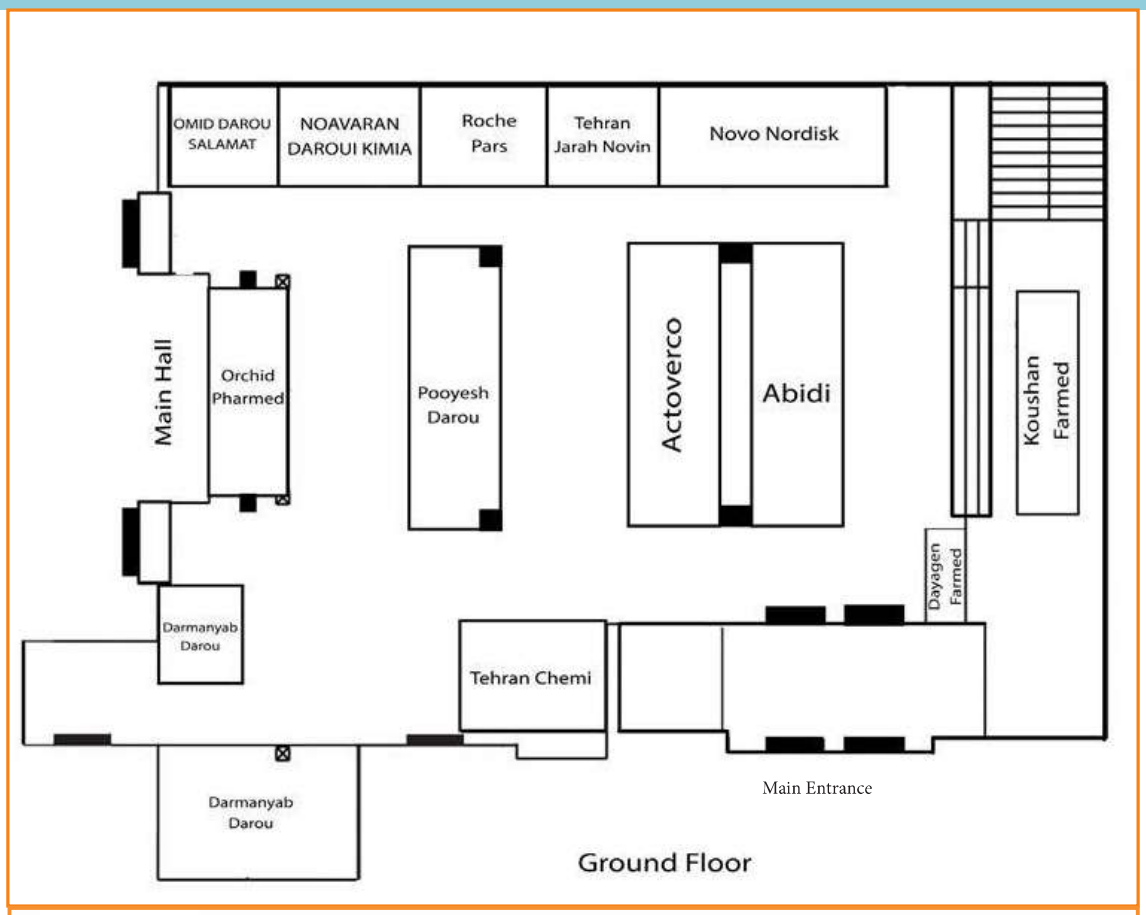
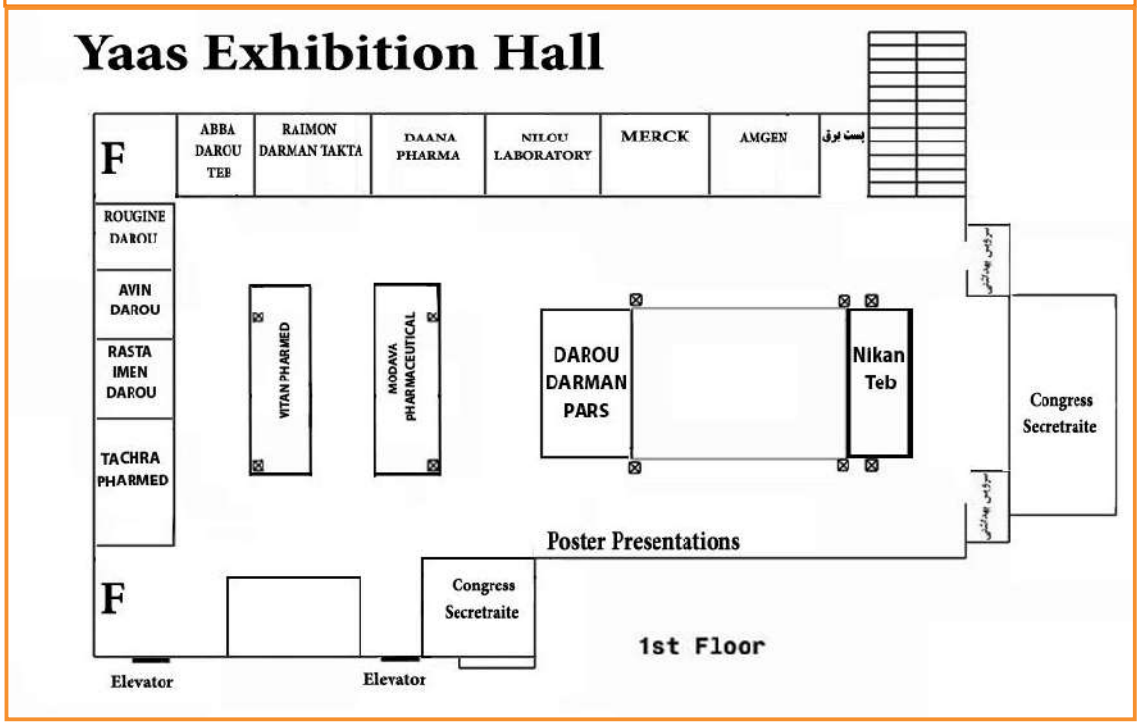
- ORCHID PHARMED
- RAIMON DARMAN TAKTA
- RASTA IMEN DAROU
- ROCHE PARS
- ROUGINE DAROU
- TACHRA PHARMED
- TEHRAN JARAH NOVIN
- VITAN PHARMED

Exhibition Map





Scientific program of the 14th ICED in Iran

Map of Exhibition

Logo	Company	November	Day	Time	Topic	Speakers	Hall
	Pooyesh Darou	22	Wednesday	11:30-12:30	Case presentation(insulin therapy)	Hengameh Abdi Effat Davoudi Ahmad Nejat	Sheikh Bahaei
	Darman Yab Darou	22	Wednesday	14:00-15:00	Bridging gaps in diabetes management: From fragmented to whole	Saeid Kalbasi Amir Kamran Nikoosokhan	Sheikh Bahaei
novo nordisk	Novo Nordisk Pars	23	Thursday	9:00-10:00	Unique Innovation of Co-formulation	Farzaneh Sarvghadi	Sheikh Bahaei
abidi	Abidi Pharmaceuticals	23	Thursday	11:30-12:30	Role of SGLT2i and GLP1 in primary vs. secondary prevention of ASCVD	Farhad Hosseinpanah Hamid Reza Aghaei	Sheikh Bahaei
CinnaGen	Cinna Gen	23	Thursday	14:00-15:00	Dyslipedemia:New Treatment Option	Alireza Esteghamati	Sheikh Bahaei
M	Modava Pharmaceuticals	23	Thursday	15:30-16:30	Don't forget about the Heart & Don't wait to protect the Kidneys	Amir Ahmadi Nasiri Sassan Sharghi Babak Sharifi Kashani	Sheikh Bahaei
FREE SENS	Farir Asa Teb	24	Friday	11:00-12:00	Enlightening the Hidden half in Glucose Monitoring: Apractical approach to iSGM	Mojtaba Malek Adel Jaahed Sara Sedaghat	Sheikh Bahaei

Main Hall	Ground Floor
Allameh Tabatabaei Hall	First Floor
Ostad Shahriar Hall	Third Floor
Parvin Etesami Hall	Third Floor

Oral Presentations

Paper ID: 3

The effect of high-fat feeding, as a metabolic stressor, on pancreatic HB9 protein level and insulin secretion in Wistar rat dams

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Abstract:

Aim: Consuming high-fat diet (HFD) is one of the environmental factors in modern societies, which threaten the health of mothers and their offspring. Studies have shown that a HFD can act as a stressor and affect the hypothalamic-pituitary-adrenal axis (HPA). On the other hand, the Hlx9 homeobox gene product, HB9, is essential for the normal functioning of the pancreatic β-cell. Regarding the adverse effects of free fatty acids derived from HFD and over activation of HPA axis on pancreatic islets' insulin secretion, the present study designed to investigate the effects of maternal HF feeding on plasma corticosterone and pancreatic HB9 protein level as well as insulin secretion from isolated islets in Wistar rats. Methods: Female Wistar rats were randomly divided into normal (N) and high-fat (HF) diet groups and were fed in accordance with their given diets from pre-pregnancy to the end of lactation. At the end of lactation period, blood samples were taken to determine plasma concentration of corticosterone. Then the animal was dissected and pancreas was removed for assessing the pancreatic HB9 protein amount and insulin secretion from the isolated islets. In addition the adrenal glands were removed to weigh.

Results: HFD increased plasma corticosterone concentration and adrenal glands weight. Moreover in the animals of HFD group, the HB9 protein level increased. Whereas, insulin secretion from isolated islets decreased. Conclusion: The result of present study confirms that HFD can act as a stressor and increase the activity of HPA axis. Moreover, long-term maternal high-fat feeding increases the HB9 transcription factor level, which is necessary for normal function of pancreas. However, it seems that the effect of elevated level of corticosterone is dominant and can lead to the impairment of pancreatic islets insulin secretion.

Keywords:

maternal high-fat diet, insulin secretion, isolated islets, chronic stress, adrenal gland, corticosterone

Paper ID: 6

Subclinical hyperthyroidism and adverse pregnancy outcomes

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Abstract:

Background: Subclinical hyperthyroidism(SH) is a less common condition, compared to subclinical hypothyroidism. SH is found in 0.4-1.7% of all pregnancies. Unlike overt thyroid diseases, the consequences of subclinical thyroid dysfunction, especially SH, on adverse pregnancy outcomes are inconclusive. Objective: We aimed to investigate the effect of maternal subclinical hyperthyroidism on adverse maternal and neonatal outcomes based on urinary iodine concentration. Methods: A secondary analysis was run on data collected in the Tehran Thyroid and Pregnancy study(TTPs). TTPs was a two-phase population-based study carried out among pregnant women receiving prenatal care, conducted from September 2013 to December 2017. For the purpose of the present study, we used data of, 131 women with SH and 1650 cases of euthyroid. Serum levels of TSH, T4, free thyroxine index(FT4I), and thyroid peroxidase antibody(TPOAb) were assessed at the first prenatal visit. A generalized linear regression model was applied to identify the effect of SH on the pregnancy outcomes based on UIC and measure effects with 95% confidence intervals were estimated.

Results: Preterm delivery was observed in 12.3% of women with SH and 6.7% of those of euthyroid (p=0.03). Women with TSH<0.3 mIU/L increased the odds of preterm delivery than those with TSH>=0.3 regardless of Urine iodine cutoff (OR= 2.27; 95% CI: (1.15,4.48), p=0.02). Among those with UIC levels ≥150 µg/L, the odds ratio of preterm delivery was 4.61-fold higher in the SH group, compared to those who were euthyroid (95%CI: 1.36–15.71, p=0.01). No significant difference was found in NICU admission between these two study groups. The results also revealed that no statistically significant difference in the mean of neonatal anthropometric parameters in SH and euthyroid groups in none of the subgroups of UIC (<150or≥150µg/l). Conclusion: This study demonstrates that SH in women with higher iodine levels can lead to the increased preterm labor during their pregnancies. This

result indicates the accelerating effect of SH on the existence of a possible U-shaped relationship between the increased premature risk and iodine levels. Notably, Iodine supplementation should be considered with caution in women with SH. Further studies on pregnancy outcomes of women with SH are highly recommended.

Keywords:
Subclinical hyperthyroidism, pregnancy, outcome, Tehran Thyroid and Pregnancy study (TTPs), urinary iodine concentrations (UIC).

Paper ID: 8

Association between new indices and the carotid intima-media thickness in type 2 diabetes mellitus

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Abstract:

Objectives: This study aimed to investigate the relationship between new indices and ratios (triglyceride glucose (TyG) index and monocyte/high-density lipoprotein cholesterol ratio (MHR)) and carotid intima-media thickness (CIMT) in type 2 diabetes mellitus (T2DM). Methods: This cross-sectional study was led between 2019 to 2021. A total of 244 participants were enrolled (118 with diabetes (DM) and 126 without diabetes (non-DM)). Duplex ultrasonography parameters and demographic, physical, and paraclinical assessments were recorded. The ratios and indices were calculated. T-test, univariate, and multivariate linear regression analyses were constructed.

Results: 118 diabetics and 126 non-diabetics were included in the cross-sectional research (113 men and 131 women), with a median age of 47. There was no statistically significant difference in CIMT levels between the two groups. In correlation evaluations, CIMT was directly related to age, BMI, triglyceride, total cholesterol, low-density lipoprotein cholesterol, and TyG index. The MHR and CIMT were not substantially different between the two groups. The Spearman correlations between MHR and CIMT in the DM group were 0.32 (p-values=0.001). Thus, regression models (stratified for DM/non-DM and male/female) revealed that the MHR is a significant predictor of CIMT, but only in the case of male DM individuals, when crudely adjusted for confounders. Additionally, in the univariate linear regression analyses performed on the whole data ($\beta = 0.197$, P=0.002) and the two study groups (DM: $\beta = 0.192$, P=0.037 & non-DM: $\beta = 0.256$, P=0.004) separately, a significant association was revealed between CIMT and TyG index.

Conclusions: In type two diabetes mellitus, the present investigation found a direct link and association between the TyG index and MHR by CIMT. Additionally, in DM subjects, MHR was demonstrated to be a predictor of CIMT in male gender. Likewise, a direct association was revealed between the TyG index and CIMT in non-diabetic issues.

Keywords:

Triglyceride glucose index, Monocyte/high-density lipoprotein cholesterol ratio, Carotid intima-media thickness, Type 2 diabetes mellitus.

Paper ID: 10

Can Empagliflozin be used in patients with type 1 diabetes: Results of a 12-week, double-blind, randomized, placebo-controlled clinical trial

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Abstract:
Objective: The objective of the study was evaluating the application of Empagliflozin as adjunctive to insulin in patients with type 1 diabetes Methods: In this Double-blind placebo-controlled randomized clinical trial, 60 patients with type 1 diabetes were randomly allocated to receive once-daily empagliflozin 10 mg or placebo as an adjunct to insulin for 12 weeks. The primary objective was to assess the effect of empagliflozin on glycemic control and insulin doses.
Results: Empagliflozin, s mean placebo-subtracted hemoglobin A1C reduction was -0.18 (95% CI: -0.37, 0.005, P=0.009), Fasting blood sugar –2.60 mg/dl (95% CI: -6.48, 1.28, P=0.035), 2-hour post-prandial blood sugar -22.56 mg/dl (95% CI: -35.15, 8.97, P<0.0001) and total daily insulin dose –7.6 units (95% CI: -12.4, 2.8, P=0.003). Furthermore, Empagliflozin reduced Body Mass Index by -0.560kg (95% CI: -0.640, 1.46, P<0.0001). In this study, empagliflozin was well tolerated, hypoglycemia, genital and urinary infections, and diabetic ketoacidosis events were not reported. Conclusion: The present study indicated that Empagliflozin is effective as an adjunct therapy to insulin in type 1 diabetes, improved glycemic control, reduced BMI and total daily insulin dose without hypoglycemia, diabetic ketoacidosis, or genital and urinary infections. However, large clinical trials with long duration needed to drew certain conclusions

Keywords:
Empagliflozin, Randomized trial, SGLT2 inhibitor, Type 1 diabetes Mellitus

Paper ID: 15

The association between blood pressure, quality of life, and emotional states in adults with different disease awareness and commitment to treatment

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Abstract:
Blood pressure (BP) status has a significant impact on an individual's health-related quality of life (HRQoL) and emotional states. The present study aimed to evaluate the relationship between different BP groups with HRQoL and emotional states considering the contribution of disease awareness and commitment to treatment among a large Iranian adult population. This was a cross-section study conducted in the framework of the Tehran Lipid and Glucose Study (TLGS). Participants were 7257 and 2449 individuals aged ≥20 of the TLGS 6th phase who had completed data on HRQoL and emotional states, respectively. Assessment of the participants' HRQoL and emotional states were performed using the Persian version of the short-form 12-item health survey version 2 (SF-12v2) and the Depression, Anxiety, and Stress Scale (DASS-21), respectively. We used Linear and logistic regression to assess the relationship between different BP groups (1) normotensive, 2) undiagnosed/unawareness, 3) diagnosed, committed to treatment, and 4) diagnosed, non-committed to treatment) with HRQoL and DASS scores. In both sexes, commitment to treatment was inversely associated with physical HRQoL except for bodily pain in men (β=-2.28, p=0.072). In women, medication non-adherence was inversely related to mental HRQoL (β=-3.56, p=0.013) and social function (β=-9.46, p=0.008), and good adherence to treatment was negatively related to mental health (β=-2.67, p=0.021). Besides, except for an inverse association between vitality (β=-3.29, p=0.024) in males with high adherence to anti-hypertensive medications, no significant association was found between mental HRQoL and BP. Moreover, in women, unlike men, high commitment to antihypertensive medications had a significant direct association with anxiety (β=1.44, p=0.027), whereas poor commitment to treatment was significantly directly related to depression (β=4.65, p=0.031) and stress (β=5.67, p=0.029). The current study found that undiagnosed disease was not associated with HRQoL and emotional state deficits. High commitment to treatment was associated with poor physical HRQoL, while disease awareness was associated with reduced mental HRQoL and emotional states which may be associated with low treatment adherence.

Keywords:
Blood pressure, Health-related quality of life, Emotional states, Disease awareness, Commitment to treatment

Paper ID: 30

Association of dietary fat quality with anthropometric measures in the pediatric age groups

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Abstract:
The association between dietary fat quality (DFQ) and anthropometric measures has not been well studied in pediatric age group. This study aimed to determine the association between dietary lipophilic index (LI) and thrombogenic index (TI) as DFQ indices with anthropometric measurements in Iranian children and adolescents. This nationwide cross-sectional study was conducted on 4323 students aged 6-18 years that were selected by multistage cluster sampling from 30 provinces of Iran. Dietary intake was collected using a validated food frequency questionnaire and dietary LI and TI were calculated by formula. Data on anthropometric measures were collected by standard protocols. The multivariate regression analysis revealed that TI and LI had inverse association with neck circumference Z-score ($P<0.05$). Also, an inverse association was observed between TI and wrist circumference ($P<0.05$). There was a positive correlation between LI with height Z-score ($P<0.05$). However, there was no significant association between LI and TI with other anthropometric indices ($P>0.05$). Given these findings, our study indicated that the quality of dietary fats was associated with some anthropometric indices. Further large-scale studies are needed to strengthen the importance of DFQ indices in relation to non-communicable diseases. Additional research related to potential pathways is also likely warranted.

Keywords:
Dietary Fats, dietary fat quality, anthropometric measures

Paper ID: 32

Effects of astaxanthin on cardio-metabolic risk factors in the pediatric age groups

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Abstract:
Obesity and cardio-metabolic risk factors are increasing rapidly in children and adolescents. The dietary supplement astaxanthin might have antioxidant and anti-inflammatory effects in cardiovascular diseases in adults. One of the most important components of shrimp oil is astaxanthin. This study aims to investigate the effects of shrimp oil supplementation on cardio-metabolic risk factors in overweight and obese children and adolescents. This randomized, triple-blind, placebo-controlled clinical trial was conducted in 64 overweight and obese participants with 10 to 18 years of age. They were randomly assigned to receive either 500 mg shrimp oil or identical placebo once per day for eight weeks. Dietary intake was obtained using 24-hour food-recall questionnaire. Fasting blood samples were obtained at baseline and after eight weeks of intervention. Overall, 53 participants completed the study; 30 received shrimp oil and 23 received placebo. There were no significant effects of shrimp oil on total cholesterol, triglyceride, HDL-C, LDL-C and blood pressure compared with the placebo group ($p>0.05$). Shrimp oil did not have significant effect in body mass index, waist circumference and hip circumference compared with the placebo group ($p>0.05$). Supplementation with shrimp oil was not effective in reducing the anthropometric measures and other cardio-metabolic risk factors. Future clinical trials are needed to investigate the beneficial effects of higher doses of shrimp oil on cardio-metabolic risk factors in the pediatric age group.

Keywords:
Astaxanthin, Shrimp oil, Cardiovascular disease risk factors

Paper ID: 41

Diabetes Mellitus and Cancer Incidence: A retrospective cohort study

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Abstract:
Diabetes Mellitus is a chronic metabolic disorder marked by insulin insensitivity and hyperglycemia and is known to affect millions of individuals worldwide. A few hypotheses have been proposed to explain the relationship between cancer and diabetes—the present cohort study aimed to investigate the relationship between diabetes mellitus and cancer incidence. The current retrospective cohort study was conducted on the participants enrolled in the PERSIAN Organizational Cohort study at Mashhad University of Medical Sciences (POCM), Mashhad, Iran. Diabetic patients of the cohort samples were included in the study and for the comparison, non-diabetic individuals were classified as the control group. A total of 503 diabetic patients were selected as the diabetic group and 2460 non-diabetic individuals were categorized as the control group. The data revealed there was a significant relation between cancer and Red blood cells (OR: 0.307 (95% CI: 0.155 - 0.61), p=0.001), hemoglobin (OR: 0.732 (95% CI: 0.594 - 0.901), p=0.003), hematocrit (OR: 0.888 (95% CI: 0.822 - 0.96), P=0.003) and BUN (OR: 1.038 (95% CI: 1.009 - 1.066), p=0.008). Univariate analysis revealed a non-significant role of first-degree family history of diabetes in cancer (OR: 0.442, 95%CI: 0.187 - 1.047, p=0.063). History of Hypertension (OR: 2.498, 95%CI: 1.08 - 5.78, p=0.032), renal failure (OR: 8.74, 95%CI: 1 - 76.355, p=0.050), and cardiovascular disease (OR: 4.162, 95%CI: 1.746 - 9.919, p=0.001) were shown to be significant risk factors for cancer development. Upon factor analysis, the results showed a non-significant relation between diabetes and cancer (OR: 0.654, 95%CI: 0.201-2.129, P=0.480). Age showed a significant correlation with cancer development (p=0.000) with each year's increase in age, 1.096 times more rates of cancer (95%CI: 1.045-1.15). Factors one, two, and four failed to show a significant relationship (P=0.551, 0.405, 0.094). However, the third factor indicated blood pressure correlated with cancer development (OR: 1.295, 95%CI: 1.004-1.67, P=0.046). This study highlighted useful information on diabetes and cancer, but in order to achieve better results, there is a need for large-sampled multicenter cohort studies. We encourage future researchers to investigate and compare morbidity and mortality of cancer within diabetic patients, as well as assess several other diabetic and hyperglycemic factors.

Keywords:
Diabetes Mellitus, Cancer , persian cohort

Paper ID: 101

Effect of Six Weeks of Swimming Training on FGF-21 and PNPLA-3 Genes Expression in Rats with PCOS

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Abstract:
Polycystic Ovary Syndrome (PCOS) is a common endocrine and metabolic disorder in women. It is assumed FGF-21 and PNPLA3 factors are affected by exercise and play a role in metabolism. This study was conducted to determine effect of swimming training on FGF-21 and PNPLA-3 genes expression in rats with PCOS. 24 adult female Wistar rats were divided into four groups as Healthy control group, PCOS control group, healthy exercise traded group and fourth group PCOS animal with exercise treatment. Swimming training was done using different water flow rate from 7 to 15 liters/minute for six weeks, five days per week for 60 minutes. The expression of FGF-21 and PNPLA3 genes were measured from the liver tissue. Data was analyzed using SPSS software (version 25) and one-way ANOVA ($p<0.05$). Based on results, a significant difference was seen on gene expression of FGF-21 ($F=7.30$, $P=0.001$), PNPLA3 ($F=20.87$, $P=0.001$) after six weeks of swimming training. Swimming training decreased FGF-21 and PNPLA-3 genes expression. It seems that swimming training by improving the metabolic pathway, have positive effects in patients with PCOS.

Keywords:
FGF-21, PNPLA3, Polycystic Ovary Syndrome, Swimming

Paper ID: 104

HDL3-C but not HDL2-C as a protective factor for cardiovascular diseases: a nested case-control study in an Iranian population

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Abstract:

The contribution of high-density lipoprotein (HDL-C) subclasses to incident cardiovascular disease (CVD) and coronary heart disease (CHD) is a matter of debate. This study aimed to examine this association in a population with high burden of dyslipidemia and CVD. In a nested case-control study, HDL-C and its main subclasses (HDL2-C and HDL3-C) were determined in 370 age- and sex-matched case and control subjects using a single-step precipitation technique. Multivariable adjusted conditional logistic regression was used to calculate the odds ratios (ORs) of associations between HDL-C, HDL2-C, HDL3-C, and HDL2-C/HDL3-C (both as continuous and categorical variables) with incident CVD and CHD after adjustment for a large set of confounders, including body mass index, current smoking, hypertension, type 2 diabetes mellitus, use of lipid-lowering drugs, family history of premature CVD, non-HDL-C, and triglycerides. In multivariate analysis, a 1 unit increase in HDL-C and HDL3-C were associated with a lower risk of incident CVD and CHD. For CVD, ORs and 95% confidence intervals (CI) were [0.95 (0.92-0.98)] and [0.95 (0.93-0.98)] for HDL-C and HDL3-C, respectively; the corresponding values for CHD were [0.94 (0.91-0.97)] and [0.94 (0.91-0.97)]. Considering HDL-C and its subclasses as categorical variables, compared to the first quartile (reference group), higher quartiles of HDL-C and HDL3-C were significantly associated with lower risks of incident CVD and CHD; the corresponding ORs (95% CI) for the fourth quartiles were [0.43 (0.25–0.74), (P for trend = 0.003)] and [0.46 (0.27–0.78), (P for trend = 0.005)] for HDL-C and HDL3-C, respectively for CVD, and [0.32 (0.17–0.59)] and [0.32 (0.18–0.59)], (all P for trend = 0.001) for CHD. Paradoxically, across quartiles of HDL2-C/HDL3-C, this lipid ratio was associated with a higher risk of CHD (92% higher risk by the 4th quartile). We found that HDL-C, and among subclasses, HDL3-C but not HDL2-C, were mainly responsible for the protective impact of HDL-C for CVD and especially CHD among Iranian adults in the presence of a large set of confounders, including non-HDL-C and triglycerides. Moreover, we found a signal that the increasing value of HDL2-C/HDL3-C was accompanied by a higher risk of CHD.

Keywords:

Cardiovascular diseases, Coronary heart diseases, High-density lipoprotein, Subclass, HDL2-C, HDL3-C

Paper ID: 156

Proinflamatory cytokines decreased in insulin resistance in diabetic mice induced by HFD/STZ: treatment role of Aqueous extract of Artemisia annua L.

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Abstract:
Objective: Type 2 diabetes mellitus (T2DM) is a metabolic disease that influences many people worldwide. Management of insulin resistance in T2DM without unsuitable side effects of chemical drugs is the ultimate goal of the medical community. Artemisia annua L is used for the treatment of diabetes in folkloric medicine. The present study investigated the effects of aqueous extract of Artemisia annua L. on insulin resistance in high-fat diet/STZ-induced diabetic mice. Material and methods: Mice were divided into groups, including control with a normal diet, un-treated high-fat diet/STZ-induced diabetic mice, and treated diabetic mice with metformin as control drug (200 mg/kg) and doses of 100, 200, 400 mg/kg body weight of hot water extract of Artemisia annua orally. After four weeks of treatment with the Artemisia annua diet, blood sampling was carried out to measure factors involving insulin resistance such as LDL/HDL ratio, free fatty acids, TNF-alpha, IL-6, and HOMA-IR as an index of insulin resistance.
Results: The results showed that Artemisia annua extract (100, 200, 400 mg/kg) and metformin (200 mg/kg) treatment significantly reduced the serum levels of free fatty acids, TNF-alpha, IL-6, LDL/HDL ratio (effectiveness of all doses of extract was lower than that of metformin, $P<0.05$- 0.0001), and HOMA-IR (effectiveness of 100 mg/kg was less than that of metformin, $P<0.01$) in diabetic mice compared to untreated diabetic mice ($P<0.0001$). Conclusion: We demonstrated that all doses of AA extract improved insulin resistance through reduction of LDL/HDL ratio, free fatty acids, TNF-alpha, and IL-6. Although the effectiveness of treatment with high doses of extract, was similar to that of Metformin. These findings confirm that there may be more bioactive components in higher concentrations of extracts. Hence, extracts of AA may be considered as an alternative and effective treatment for type 2 diabetes. However, intensive examinations should be performed to detect fractions of extracts of AA to identify bioactive compounds in terms of their pharmacological effects associated with insulin resistance. We are further investigating in our laboratory to explore the molecular mechanisms of action of these extracts in reducing insulin resistance in type 2 diabetes.

Keywords:
proinflamatory cytokines, insulin resistance, Artemisia annua, diabetes

Paper ID: 164

The effect of melatonin supplementation on serum levels of leptin and adiponectin: A systematic review and meta-analysis of randomized clinical trials

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Abstract:
Obesity is a major global health issue which characterized by excessive production of reactive oxygen species (ROS). Increased body fat is also associated with insulin resistance and metabolic syndrome due to the dysregulation of adipokines and pro-inflammatory cytokines. Adipokines regulate lipid metabolism, appetite and energy balance, insulin sensitivity, immunity, and inflammation. Any changes in the adipokine profile, including elevated levels of leptin and reduced release of adiponectin, are among the manifestations of obesity. Therefore, finding a therapeutic strategy to restore the hormonal equilibrium associated with obesity and reduce ROS production could be of interest. Melatonin is a hormone with antioxidant properties that may be effective in controlling appetite and food intake. Besides, it has beneficial effects on the components of MetS, including hyperglycemia, dyslipidemia, and insulin resistance. Therefore, the aim of this meta-analysis was to determine the effect of melatonin supplementation on serum levels of leptin and adiponectin. Electronic databases, including PubMed, SCOPUS, and Web of science were searched to find relevant papers from inception to 2023. Original clinical trials published in English language that investigated the effect of melatonin on adipokines were considered eligible. The random-effect model was applied to analyze data. A total of 1583 records were identified in the initial search; from these, 5 were included in the meta-analysis. The pooled analysis of 7 effect sizes from 5 studies showed a trend toward a reduction in serum level of leptin after melatonin supplementation, while the change was not statistically significant (WMD: -1.051; 95% CI: -2.853, 0.750; P=0.253), (figure 1). The pooled analysis of 3 effect sizes showed a significant increase in adiponectin level following melatonin supplementation (WMD: 0.93; 95% CI: 0.39, 1.47; P=0.001), (figure 2). The beneficial effects of melatonin on serum levels of adiponectin and leptin mainly support the hypothesis that melatonin may ameliorate obesity and related conditions. However, further research is needed to fully understand its impact on obesity. Disclosure Information: The authors have nothing to disclose.
Keywords: Melatonin, Leptin, Adiponectin, Obesity.

Paper ID: 166

Investigating the impact of substituting clarified butter or ghee with canola oil on liver steatosis and enzymes, fasting blood glucose, and insulin resistance in individuals suffering from non-alcoholic fatty liver disease

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Abstract:
In recent years, non-alcoholic fatty liver disease (NAFLD) has indeed emerged as a significant public health concern due to its high prevalence. NAFLD encompasses two distinct clinicopathological conditions: simple steatosis and non-alcoholic steatohepatitis. There has been a shift in the field of hepatology from a singular focus on individual liver disease to a broader consideration of concurrent conditions, particularly obesity and diabetes. Including canola oil, as part of a well-balanced diet may offer potential benefits in improving NAFLD. The objective of current clinical trial was to assess the effects of replacing clarified butter with canola oil on key primary outcomes such as liver steatosis and enzymes, as well as secondary outcomes including glycemic variables, and anthropometric measurements in patients with NAFLD. In this trial, a total of 110 patients (55 men and 55 women) with an average Body mass index (BMI) 28.2 ± 1.6 kg/m2 and a mean age of 42 ± 9.6 years, who regularly consumed ghee, were enrolled. These participants were randomly assigned to either the intervention or control group. Over the course of 3 months, the intervention group was instructed to follow a healthy diet and replace ghee with an equivalent amount of canola oil. On the other hand, the control group continued their consumption of clarified butter and were also advised to adhere to a healthy diet. The results of the study revealed a significant decrease in liver steatosis in the intervention group compared to the control group. Moreover, the intervention group exhibited a significant change in serum levels of alanine aminotransferase (-14.4 IU/l), γ-glutamyltransferase (-1.8 IU/l), Fasting blood glucose (-7.5 mg/dl), Insulin (-3.05 mU/l), HOMA-IR (-0.9), QUICKI (+0.01), weight (-4.3 kg), BMI (-0.04 kg/m2), and waist (-5.6 cm). The replacement of clarified butter with canola oil led to significant enhancements in liver steatosis and enzyme levels, glycemic variables, and anthropometric measurements in individuals suffering from NAFLD even subsequent to adjustments made with covariates. Disclosure: Nothing to disclose.

Keywords:
Canola oil, Clarified butter, obesity, Rapeseed Oil, Non-alcoholic fatty liver disease, Insulin resistance

Paper ID: 174

Assessment of the anti-inflammatory and anti-glycemic properties of Royal Jelly and Tocotrienol-rich fraction in an experimental study: Does irisin mediate these effects?

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Abstract:

Background: Irisin, a novel adipomyokine, has been proposed to be a therapeutic agent against obesity-related metabolic disease. Royal jelly (RJ) and tocotrienol-rich fraction (TRF) are suggested to promote obesity and its related problems. This investigation intended to evaluate the glycemic and inflammation-promoting effects of RJ and TRF through irisin action in obese rats induced by a high-fat diet (HFD) that underwent a calorie restriction diet (CRD). Material and Methods: Fifty HFD-fed obese rats received the following interventions: RJ, TRF, or RJ+TRF in combination with a CRD for 8 consecutive weeks. After the investigation, body weight, fasting blood sugar (FBS), irisin, insulin, C-reactive protein (CRP), interleukin-6 (IL-6), interleukin-1 β (IL-1β), leptin, adiponectin, and insulin resistance (IR) were assessed.

Results: After 8 weeks of treatment, significant weight reduction was noticed in rats received RJ and RJ+TRF related to the CRD rats ($P<0.001$), although this reduction was not considerable in TRF-treated rats. RJ and RJ+TRF supplementation markedly elevated irisin concentrations in CRD rats ($P<0.05$), but TRF did not. Glycemic indices, inflammatory indices including IL-1b and CRP levels, and leptin concentrations were significantly decreased after RJ, TRF, and their combination were added to CRD ($P<0.05$). According to the mediational analysis results, irisin mediated the promoting effects of RJ on glycemic hemostasis. Conclusion: Based on the results of this investigation, RJ and TRF are novel nutrients that have the potential to improve obesity-related disorders. This research suggests that RJ exerts its beneficial glycemic regulatory effects through irisin.

Keywords:

Glucose hemostasis, Irisin, Inflammation, Obesity, Royal Jelly, Tocotrienol-rich fraction

Paper ID: 186

Chronic inorganic nitrate administration increases the expression of genes involved in the browning of gonadal adipose tissue in ovariectomized rats

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Abstract:
Nitrate, as nitric oxide (NO) donor, has been suggested as a nutrition-based treatment for decreasing the risk of menopause-related obesity. This study aimed to specify the effects of chronic inorganic nitrate administration on uncoupling protein-1 (UCP-1), peroxisome proliferator-activated-receptor-γ (PPAR-γ) coactivator-1α (PGC-1α), and PPAR-γ expression in gonadal adipose tissue (GAT) of ovariectomized (OVX) rats. Female rats were assigned to 3 groups: Control, OVX, and OVX+nitrate (n=7/group), which consumed water containing inorganic nitrate (100 mg/L) for 9 months. At month 9, GAT was used for the measurement of NO metabolites (NOx), mRNA levels of NO synthases [endothelial (eNOS), inducible (iNOS), neuronal (nNOS)], and mRNA and protein levels of UCP-1, PGC-1α, and PPAR-γ. OVX rats had lower NOx concentration (45%) and eNOS (38%) and nNOS (30%) expression in GAT that was restored to normal values following nitrate administration. OVX rats had significantly lower mRNA and protein levels of UCP-1 (83% and 30%), PGC-1α (65% and 39%), and PPAR-γ (66% and 34.5%) in GAT. Chronic inorganic nitrate administration in OVX-rats increased mRNA and protein levels of UCP-1 (128% and 34%), PGC-1α (115% and 43%), and PPAR-γ (236% and 38%), respectively. In OVX rats, chronic nitrate administration increased gene and protein levels of UCP-1, PGC-1α, and PPAR-γ in GAT, indicating the anti-obesity effects of nitrate are partially mediated by the white adipose tissue (WAT) browning. Moreover, the stimulatory effect of inorganic nitrate on the WAT browning in OVX rats was associated with blunting the OVX-induced NO deficiency in GAT.

Keywords:
Nitrate, Nitric oxide, Female rats, Gonadal adipose tissue, Browning of WAT.

Paper ID: 198

The effects of Nigella Sativa oil supplement with a weight-loss diet on anthropometric indices and metabolic status based on polymorphisms of adiponectine and PPAR-gamma2 genes

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Abstract:

Background: Obesity, as the most prevalent nutritional disorder, is a major global health issue influenced by various environmental and genetic factors. The aims of the present study were to examine the effects of black seed oil supplementation along with a weight-loss diet in obese women, considering genetic differences. Methods: In this randomized double-blind clinical trial, 90 obese women with a body mass index (BMI) between 29.34 and 30 kg/m² were randomly assigned to two groups. They received either a weight-loss diet along with 3 grams of black seed oil or placebo (divided into three doses /day). At the beginning and end of the study (after two months), anthropometric measurements, and dietary intake were examined. Biochemical markers including lipid profile, inflammatory factors (IL-6, TNF-α, hs-CRP), and liver enzymes (AST, ALT) were also assessed. Additionally, genotypes of adiponectin and PPAR-γ2 genes were determined by PCR-RFLP method. Findings: A total of 84 participants completed the study. In the black seed group, TT genotype frequency for adiponectin gene was 67% compared to 75% in the placebo group, while TG/GG genotype frequency was 32% versus 24%, respectively. Additionally, the frequencies of Pro/Pro polymorphisms (7.76% versus 78%) and Pro/Ala polymorphisms in the PPAR-γ2 gene (3.23% versus 22%) were observed. Within genotype subgroups of the adiponectin gene (TT, TG/GG), no significant differences were measured in anthropometric and biochemical indices between the black seed group and placebo group. However, individuals with the Pro/Pro polymorphism in comparison to the Pro/Ala polymorphism of the PPAR-γ2 gene showed significant reductions in waist circumference (9.2% versus 5.0%, $p = 0.01$) and serum triglyceride levels (3.16% versus 2.11%, $p < 0.01$) in the black seed group compared to placebo. Conclusion: Supplementation with black seed oil along with a weight-loss diet for 8 weeks, regardless of genotype considerations, led to improvements in anthropometric and biochemical indices in obese women. Additionally, the interaction between intervention and PPAR-γ2 gene resulted in reduced waist circumference and serum triglyceride levels in individuals with the Pro/Pro genotype. Despite these positive findings, further studies in this area are needed.

Keywords:

Nigella Sativa, low-calorie diet, Complementary therapies, Obesity, Genotypes

Paper ID: 203

Epidemiologic study of neonatal hypothyroidism in Qazvin province (years 2016-2020)

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Abstract:
Epidemiologic study of neonatal hypothyroidism in Qazvin province (years 2016-2020) Introduction Neonatal screening, in addition to early detection of neonates with hypothyroidism and rapid treatment and prevention of complications and reduction of familial problems, is aimed at epidemiologic and physiopathological examination of the disease in the community. Methods The study was descriptive. Of the 92403 neonates sampled From the beginning of 2016 to the end of 2020, 4828 cases were suspected (with a TSH level above 5), and with a reassessment (with intravenous tests), 511 patients were diagnosed and treated. Results - 50.7% of the patients identified were under 28 days of age, 9.8% were treated between 28-40 days and 39.5% after 41 days. -Of the 511 patients identified, 43.8% were girls and 56.2% were boys - In terms of family history of patients' parents, 17.4% were grade 3, 6.8% grade 4, and 75.8% had no familial relationship. -The method of mother's delivery were 41.9% vaginal and 58.1% section. Conclusion Given that the incidence rate in Qazvin province is one in 180 newborns, this is more than the incidence of a country (one in 341 births) and a global incidence (one in 3000-4000 births). Keywords: Hypothyroidism, neonates, patient,Qazvin

Keywords:
Hypothyroidism, neonates, patient,Qazvin

Paper ID: 209

The relationship between thyroid hormone alterations in acute phase of COVID-19 and post-COVID syndrome among severe and critical COVID-19 patients: A bidirectional cohort

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Abstract:

Background: Although there have been numerous reports of thyroid involvement in Coronavirus disease 2019 (COVID-19), studies have paid less attention regarding the association between thyroid hormone alterations and long-term outcomes of COVID-19. Methods: In this bidirectional cohort, 150 patients with definitive severe and critical COVID-19 who were admitted to intensive care units (ICUs) were enrolled. All participants were sampled for thyroid function tests (TFTs) of T3, T4, free-T4 and Thyroid Stimulating Factor (TSH) between 5-10 days after the ICU admission. Moreover, the relation between TFT abnormalities and short-term outcomes (respiratory support, mortality and the number ICU staying) and also post-COVID symptoms during six-month were evaluated.

Results: 83 men (55.3%) and 67 women (44.7%) with an average age of 62 ± 16 years were included. The average length of ICU stay was 11.86 ± 8.1 days, and 77 (51.3%) of the patients passed away. In general, 72 patients (48%) had thyroid disorders, most of which was T3 decreation (18%). There was a significant inverse association between the level of TT3 and free-T4 with the mortality rate. Furthermore, we observed a significant relationship between FT4 and the need for more advanced oxygen delivery methods. Patients with high erythrocyte sediment rate (ESR) had higher TSH, and patients with high lactate dehydrogenase (LDH) had lower T3. After performing multivariate regression, the relationship between fT4 and age with the mortality rate were significant. On day 90, high

TSH levels had a significant relationship with persistent chest pain, palpitations, tinnitus, paresthesia, muscle pain, depression, and hair loss. Furthermore, high levels of T4 were associated with palpitation, paresthesia, concentration disorder, depression and anxiety. Also, there was a statistically significant relationship between the average of T3 and muscle pain. There was also a correlation between fT4 and palpitations, headache, paresthesia, concentration disorder, and hair loss. Similarly, there was a significant relationship between TFT alterations and these symptoms after six-month.

Conclusions: Considering the significant relationship between the thyroid hormones alterations and the

Keywords:
COVID-19, thyroid function tests, outcome, ICU, Post-COVID-19 syndrome

Poster Presentations

Paper ID: 16

Dietary patterns and health-related quality of life: Findings from a large Iranian urban population

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Abstract:
The current study aims to investigate the association between dietary patterns and health-related quality of life (HRQoL) in a large Iranian adult population. This cross-sectional study was conducted using the Tehran Lipid and Glucose Study (TLGS) data. Data from 5711 adults (53.0% female) collected by trained interviewers were analyzed. For assessments of dietary intakes and HRQoL, the 168-item semi-quantitative Food Frequency Questionnaire (FFQ) and Short-Form 12-Item Health Survey version 2 (SF-12v2) were used, respectively. Dietary patterns were identified using factor analysis. Multiple regression analysis was used to assess the association between dietary patterns and HRQoL scores. Two dietary patterns labeled Healthy and Western were identified. The median (interquartile range) of physical component summary (PCS) and mental component summary (MCS) were 50.4 (44.8-54.5) and 49.8 (41.6-57.2), respectively. In the adjusted models, the Healthy dietary pattern was significantly associated with both PCS (β=0.6, $p<0.001$) and MCS (β=0.18, $p=0.015$). Moreover, significant increasing trends were observed in the MCS scores in both men ($p=0.031$) and women ($p<0.001$) and in the PCS scores only in women ($p=0.002$) across tertiles of Healthy dietary pattern. In addition, the Western dietary pattern was not significantly associated with both PCS (β=0.6, $p<0.001$) and MCS (β=-0.05, $p=0.60$), however, a significant decreasing trend was observed in the MSC scores across tertiles of the Western dietary pattern in men ($p=0.009$). Current findings indicated that the Healthy dietary pattern was associated with better mental and physical HRQOL, while no association was found regarding the Western dietary pattern. The present study indicates the more beneficial effect of the Healthy dietary pattern on women's HRQoL as well as the stronger effect of dietary patterns on the mental aspects of HRQol.

Keywords:
Health-related quality of life, Dietary patterns, Adults, Iran

Paper ID: 17

From Data to Diagnosis: Machine Learning's Role in Stratifying Recurrence Risk for Thyroid Cancer

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Abstract:
Purpose: The rise in thyroid cancer cases is mainly due to better detection, even though mortality is low. Preventing recurrence is vital. To gauge patient recurrence risk, machine learning's predictive power for thyroid cancer recurrence was studied. Methods: Over 15 years, 283 patients were tracked for a minimum of 10 years. 13 clinical features were analyzed to predict recurrence. Different machine learning models were trained on three feature sets: all except the ATA risk score, only ATA risk, and all combined. An additional 100-patient cohort from the same center was used for internal validation. Findings: Patients (81% female) had an average age of 40.87 ± 15.13 years. The most accurate model used a support vector machine on all features, with specificity and sensitivity of 97.14% and 93.33% respectively. Models based only on the ATA risk score had 93.33% sensitivity but lower specificity at 87.14%, possibly indicating false positives. Conclusion: Machine learning is effective for risk assessment in well-differentiated thyroid cancer, and it can improve how existing tools like the ATA risk model are used.

Keywords:
Machine learning, Artificial intelligence, Thyroid cancer, Recurrence

Paper ID: 19

Correlation of Helicobacter Pylori infection with Hashimoto's thyroiditis: A case-control study

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Abstract:
Nowadays association between autoimmune thyroid disorders and chronic autoimmune gastritis has been identified. The aim of present study was to investigate the correlation of between Helicobacter Pylori (H.P) infections with Hashimoto's thyroiditis. This case- control study was conducted on 74 individuals 17-62 years old referring to endocrinology clinic in Birjand (capital of South Khorasan province, Iran) in 2022-2023. Population study was including 38 patients with diagnosis of Hashimoto's thyroiditis based on serum positive anti thyroid peroxidase (TPO), increased level of thyroid stimulating hormone (TSH) and also, decreased level of free T4 (FT4) as a case group and 36 individuals from his or her family of patients for economic and social matching between two groups with negative serum TPO, TSH and FT4 levels, as a control group. Furthermore, two groups were matched in terms of age and sex. A questionnaire was completed for each person including demographic information, and etc. all participants were referred to laboratory for taking of venous blood samples and stool samples for TPO, TSH, FT4 levels measurement and H.P antigen value respectively. Our results showed that mean age of individuals was 36.6±10.44 years and 81.1% of them were female. Mean age in case and control groups was respectively (36.55±8.83 vs. 36.66±12.03) years (p=0.96) that there was no significant difference between two groups. Mean TPO level was (411.39±424.82 vs. 5.96±5.87) in case and control groups (p<0.001) and mean TSH level was (8.59±16.35 vs. 2.53±1.3) in case and control groups respectively that both statistically were significantly higher in case group compared with the control group (p<0.001). Also, there was 17(58.6%) positive H.P stool antigen in case group in contrast with 12(41.4%) in control group that although was higher in case group than control group but had no significant difference (p=0.34). However, it was found a positive significant correlation between TPO level and H.P stool antigen value (r=0.2, p=0.03). In conclusion, it was found a positive significant correlation between TPO level and H.P stool antigen value therefore; H.P infection may play a role in the development of autoimmune thyroiditis.

Keywords: Hashimoto's thyroiditis, Helicobacter Pylori, Thyroid peroxidase, Thyroid stimulating hormone

Paper ID: 20

Effects of Empagliflozin and Metformin on BMI, laboratory and inflammation marker in Type 2 Diabetic Patients

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Abstract:

Background: Type 2 diabetes (T2D) is characterized by chronic inflammation. This study evaluated the anti-inflammatory effects of empagliflozin added to metformin therapy in T2D patients. Methods: 50 overweight T2D patients on metformin were randomized to receive additional Empagliflozin 10mg/day (n=25) and continue metformin alone (n=25) for 6 months. Fasting plasma glucose (FPG), HbA1c, weight, BMI, creatinine, and urinary albumin were measured at baseline and 6 months. Serum interleukin (IL)-1 and IL-6 were quantified by ELISA.

Results: Patients receiving empagliflozin plus metformin had significant reductions in FPG (127.56±21.54 vs 153.76±32.81 mg/dL, p=0.002), HbA1c (6.81±0.67% vs 7.28±0.82%, p=0.031), and BMI (25.33±3.99 vs 27.97±3.87 kg/m2, p=0.037) compared to metformin alone. IL-1 decreased in the empagliflozin group (p=0.007) and correlated with glucose control. No differences were seen in IL-6 in two groups. Conclusion: Adding empagliflozin 10mg daily to metformin leads to improved glycemic control and reduced inflammation, as evidenced by decreased IL-1 levels, in overweight T2D patients versus metformin alone over 6 months. The results support the anti-inflammatory effects of empagliflozin. Larger trials are warranted to confirm long-term clinical impact.

Keywords:

Empagliflozin, Metformin, interleukin, Type 2 diabetes

Paper ID: 21

The effect of preoperative vitamin D status on the occurrence of post - total thyroidectomy hypocalcemia

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Abstract:

Background: One of the most common and important complications of total thyroidectomy (TT) is transient or permanent hypocalcemia. Vitamin D deficiency before surgery has been suggested as one of risk factors for post-total thyroidectomy hypocalcemia. Objectives: This study was designed to investigate the effect of preoperative vitamin D status on the occurrence of post-total thyroidectomy hypocalcemia. Methods: Patients who underwent TT without parathyroidectomy were divided into three groups based on their preoperative vitamin D levels. Serum vitamin D levels <20 ng/ml, 20-30 ng/ml, and ≥30 ng/ml were considered as deficient, insufficient, and normal vitamin D levels, respectively. Serum levels of calcium and phosphorus were measured before and 24 hours after surgery in all patients. The patients were examined for clinical symptoms and signs of hypocalcemia postoperatively. In cases with positive clinical symptoms and signs of hypocalcemia and/or calcium levels <8 mg/dl, PTH level was measured before starting calcium infusion, while serum calcium and phosphorus levels were also measured 24 hours later.

Results: Among 100 patients enrolled in this study, 81% were females. The mean age was 36.60±8.32 years. The mean vitamin D level before surgery was 26.9±16.89 ng/ml, while 47% of cases had normal vitamin D level, 32% had insufficient vitamin levels, and 21% had vitamin D deficiency. Twenty-four hours after surgery, the calcium (P=0.356) and phosphorus (P=0.743) levels were not significantly different between the three vitamin D groups. PTH level in hypocalcemic patients was measured before calcium infusion. Comparison of postoperative PTH levels between the three vitamin D groups showed no significance difference (P=0.596). Conclusion: According to our findings, postoperative serum calcium level was not affected by preoperative serum vitamin D levels.

Keywords: Hypocalcemia, Vitamin D, total thyroidectomy

Paper ID: 22

Frequency of mortality and adverse outcomes of Covid-19 among hospitalized type 2 diabetes patients with previous history of sitagliptin or metformin consumption

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Abstract:

Background: The 2019 coronavirus disease (COVID-19) is associated with a high risk of mortality, especially among diabetes mellitus (DM) patients. Several studies have investigated the effect of sitagliptin as a dipeptidyl peptidase 4 (DPP-4) inhibitor and metformin on COVID-19 patients and have found conflicting results. Objectives:The current study investigated the clinical course of Covid-19 disease among type 2 diabetes (T2DM) patients who had been previously treated with sitagliptin, metformin, or both. Methods: This cross-sectional retrospective study was conducted on T2DM patients with Covid-19 infection already treated with sitagliptin, metformin, or both. The participants were chosen from among patients referring to Naft Hospital of Ahvaz, Iran between March 2020 and March 2022. A total of 529 diabetic patients treated with metformin (n=197), sitagliptin (n=231) or both (n=101) for a period of at least 3 months were included in the study. Data related to mortality and adverse outcomes due to Covid-19 were obtained from the medical records of the patients.

Results: The mortality rate in diabetic patients was 80 (15.1%), with the highest mortality rate being 28.9% in the metformin group (P<0.0001). The three groups were significantly different in terms of the frequency of acute respiratory failure (P < 0.0001), stroke (P = 0.002), pulmonary embolism (P < 0.0001) and the need for ICU admission and intubation (P < 0.0001). However, no difference was observed between the three groups in terms of the incidence of myocardial infarction.

Conclusions: This study showed that the use of sitagliptin for controlling blood sugar in T2DM patients can help reduce the adverse outcomes and risk of death caused by Covid-19. The mortality and morbidity rates in metformin-treated T2DM patients were higher compared with the other two groups.

Keywords: Covid-19, Metformin, Type 2 diabetes, Sitagliptin, Mortality

Paper ID: 24

Polycystic Ovary Syndrome and Silent Coronary Artery Disease: Long-term Implications for Developing Cardiovascular Diseases

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Abstract:
Polycystic ovary syndrome (PCOS) has been connected to frequent cardiovascular disease (CVD) risk factors, such as diabetes, hypertension, and metabolic syndrome. However, the number of CVD events does not correspond to the number of risk factors. Specifically, it appears that several studies have overestimated risk variables due to methodological restrictions, while some other studies were unable to detect high rates of CVD events in PCOS women, particularly in aging ones. This open question related to the information gaps regarding longer-term links between PCOS and CVD was elegantly evaluated in this study. The design of the study was a prospective cohort, and its data was provided from TLGS, one of the earliest population-based studies. Silent coronary artery disease (CAD) was identified using electrocardiogram (ECG)-based changes in accordance with the Minnesota codes, which is an easy, non-invasive, and affordable method. As a screening tool for the general population, the diagnosis of silent CAD based on ECG has a high sensitivity for cardiovascular event prediction. The multivariable Cox model was used to compare silent CAD and CVD outcomes between women with a history of PCOS and the control group, who were eumenorrheic non hirsute women. Because the study had a long follow-up duration (more than 15 years), 90% of participants had more than 11 years of follow-up at the end of the period. Most PCOS women were therefore past the prime of their reproductive lives by the conclusion of the study. As a population-based study, it might be suggested that the results are more likely to be robust due to enrolling unselected PCOS women as well as healthy controls from the community. Based on comparing the values of hazard ratios (HRs) of CVD in women with a history of silent CAD and those with PCOS, comparable but opposite effects (risk and protection) were detected. The design of the study enabled us to find that PCOS women who reached their late-stage reproductive years may not be at as high risk of CVD as previously thought, probably as a result of a number of factors that provide protection, such as the changes in the endocrine system in the late stages of women's reproductive lives combined with changes in factors related to the social system as well as lifestyle.

Keywords:
Polycystic ovary syndrome; Silent coronary artery disease; cardiovascular disease; Tehran Lipid and Glucose Study

Paper ID: 26

Midterm dietary patterns following sleeve gastrectomy in relation to total weight loss and the proportions of weight loss as fat mass and fat-free mass

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Abstract:
Insufficient weight loss or excessive fat-free mass (FFM) loss can compromise the effectiveness of bariatric surgery. This study aimed to identify the major dietary patterns of patients who underwent sleeve gastrectomy at midterm after surgery, as well as their associations with postoperative total weight loss (TWL) and proportions of FFM and fat mass (FM) loss to weight loss. A total of 146 patients were studied for approximately 24 months post-sleeve gastrectomy. Dietary intake was assessed using a 147-item food frequency questionnaire. The dominant food patterns were identified through principal component analysis based on the 19 food groups. Non-response was defined as a TWL of less than 25%. The highest tertile, with a value greater than 28% of weight loss for FFM and more than 77.9% of weight loss for FM, was defined as excess FFM and high FM loss, respectively. Linear regression and logistic regression were used for statistical analysis. Two predominant dietary patterns were retained, accounting for a total of 32.4% of the variance in food consumption. Each 1-unit increase in the first dietary pattern score characterized by high intakes of fast foods, soft drinks, processed meats, sugar confectionary, salty snacks, grains, and organ meats was associated with 1.99% (95% CI = 0.34, 3.66%) higher FFM loss, 1.84% lower FM loss (95% CI = -3.49, -0.20), and 84% higher odds of excessive FFM loss (OR = 1.84; 95% CI = 1.09, 3.11). Participants with higher adherence to the diet had lower %TWL, and greater odds of nonresponse and excessive FFM loss than those with lower adherence. Each 1-unit increase in score for the second dietary pattern characterized by a high intake of fruits, dairy, vegetables, legumes, eggs, nuts, red meats, poultry, and fish was associated with lower odds of nonresponse (OR = 0.51, 95% CI = 0.31, 0.86) after adjusting for all potential covariates. For the optimal postoperative outcome, the study suggests that patients undergoing sleeve gastrectomy should modify their diet by decreasing their consumption of ultra-processed foods and increasing their intake of high-quality protein sources, fruits, and vegetables.

Keywords: Bariatric surgery, Body composition, healthy eating index, principal component analysis, Ultra-processed foods, Protein.

Paper ID: 33

Anti-diabetic effects of L-Citrulline in obese type 2 diabetic female rats

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Abstract:
The prevalence of diabetes is increasing worldwide. Decreased nitric oxide (NO) bioavailability is seen in diabetic animals and humans. L-citrulline (Cit), a precursor of NO production, has been suggested as a novel therapeutic agent for type 2 diabetes (T2D). This study evaluated the use of Cit on carbohydrate metabolism in obese T2D female rats. T2D was induced using a high-fat diet with low-dose streptozotocin (30 mg/kg) injection. Female Wistar rats (n=24) were divided into Control, Control+ Cit, T2D, and T2D+ Cit. The treatment groups received Cit at a dose of 4 g/L in drinking water for 8 weeks. Fasted blood samples were collected from rats' tails at weeks 0, 4, and 8 to measure glucose, triglycerides (TG), total cholesterol (TC), low-density lipoprotein-cholesterol (LDL-C), and high-density lipoprotein-cholesterol (HDL-C). Intraperitoneal glucose tolerance test (IP-GTT) and intraperitoneal pyruvate tolerance test (IP-PTT) were performed in all rats at weeks 4, and 8. Cit administration to the T2D rats decreased fasting glucose (11%, P<0.0001), TG (14%, P=0.0029), TC (11%, P=0.0001), LDL-C (17%, P<0.0001), and increased HDL-C (6%, P=0.0143) over the 8 weeks of study. Compared to non-treated T2D rats, Cit administration to the T2D rats improved glucose tolerance at week 4 (AUC: 27278±184 vs. 29760±1230, P=0.0002) and week 8 (AUC: 27382±195 vs. 29436±68, P=0.0007) and decreased gluconeogenesis at week 4 (AUC: 13838±62 vs. 15441±173, P=0.0013) and week 8 (AUC: 13997±39 vs. 15603±113, P=0.0002). Cit administration had no effect on control rats. Cit has anti-diabetic effects in obese T2D female rats. These findings are relevant for treating T2D using a Cit-rich diet. This issue, however, needs to be confirmed in a randomized clinical trial.

Keywords:
L-citrulline, type 2 diabetes, glucose tolerance, rat.

Paper ID: 36

The efficacy of acupuncture in thyroid function, fertility improvement between female with hashimoto thyroiditis: A systematic review

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Abstract:
Objectives: Hashimoto thyroiditis (HT) is highly prevalent among reproductive-aged women and has a substantial negative impact on fertility. Currently, there is no specific treatment for Hashimoto thyroiditis. It has been reported that acupuncture can halt or delay the progression of HT and improve fertility in child-bearing period female; thus this present study was conducted to determine efficacy of acupuncture in thyroid function, fertility improvement between female with hashimoto thyroiditis Methods: This systematic review was performed in Medline, EMBASE, Cochrane library, Science direct and Springer databases to find relevant articles. Search terms include: acupuncture, effectiveness, fertility, function , Hashimoto thyroiditis between Clinical trial, semi-experimental , Cohort studies, case-control studies assessing the results in effect of acupuncture in thyroid function, fertility improvement between female with hashimoto thyroiditis were included. Out of 32 papers identified through initial search, 26 relevant studies were selected from which, 19 paper s were included in this systematic review.
Results: All women received acupuncture at points RN23, ST9, RN17, RN4, RN6, ST36, SP6, KI6 for at least 12 consecutive weeks. Primary evaluation included reduction of thyroid peroxidase antibody (TPOAb) and thyroglobulin antibody (TGAb) titers, and secondary outcomes included improvement of thyroid function, ovarian function, rate of primary ovarian failure, and pregnancy success. Conclusion: It seems that the acupuncture method can be one of the acceptable methods to improve thyroid function and fertility results in women with Hashimoto's thyroiditis. Key words: acupuncture, effectiveness, fertility, Hashimoto thyroiditis

Keywords:
acupuncture, effectiveness, fertility, Hashimoto thyroiditis

Paper ID: 38

The association between plant-based diet indices and metabolic syndrome: a systematic review and dose-response meta-analysis

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Abstract:

Aim/

Introduction: the prevalence of metabolic syndrome (MetS) and its components have markedly increased worldwide. Among lifestyle factors introduced to lower the risk of MetS, healthy dietary patterns have gained considerable attention. This study aimed to assess the association between adherence to Plant-based Dietary Patterns indices including O-PDI (overall Plant-based Dietary index), H-PDI (healthy Plant-based Dietary index), U-PDI (unhealthy Plant-based Dietary index) and risk of MetS development. Methods: to find related observational studies which assessed the association between Plant-based Dietary indices and risk of MetS development, PubMed/Medline, Scopus and Web of Science databases were searched up to May 2023. A random effects model was used to estimate pooled odds ratios (OR) and 95% confidence intervals (95% CI). To assess the heterogeneity of included studies, the I2 index was used.

Results: 8 studies including 34277 participants from the initial 268 studies were recognized to include in this meta-analysis study. According to pooled analysis, there was a non-significant relationship between the adherence to O-PDI and H-PDI and the lower risk of MetS, while greater adherence to U-PDI was associated with 20% increases in the risk of MetS (ES: 1.20; 95% CI: 1.00, 1.44; I^2= 74.7%, p<0.001). According to our analysis on the association between adherence to PDIs and the risk of MetS components, greater adherence to O-PDI and H-PDI was significantly associated with higher risk of elevated FBS and obesity, respectively. As well, greater adherence to U-PDI was significantly associated with higher risk of obesity, hypertriglyceridemia, low HDL-C, elevated FBS. Conclusion: our results highlighted the importance of food choices in the context of a plant-based dietary pattern, indicating the adherence to unhealthy plant-based dietary patterns rich in less healthful carbohydrates may induce the risk of MetS development. Disclosure: The authors declare no conflict of interest in this work.

Keywords: plant-based dietary pattern, metabolic syndrome, meta-analysis

Paper ID: 39

Prevalence of impaired fasting glucose among men without self-reported history of diabetes

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Abstract:
Impaired fasting glucose refers to a state in which an individual's fasting blood glucose ranges from 100 to 125 mg/dl, just below the level for diabetes. Such people are at a higher risk of becoming type 2 diabetes mellitus. Therefore, we conducted a cross-sectional study to investigate prevalence of impaired fasting glucose among men without self-reported history of diabetes in Ardabil. Our study included 113 men aged 20–57, at their first visit to the nutrition clinic. Upon the anthropometric measurements, participants were referred to a laboratory for blood sample collection at a 12 hours of fasting state in the morning. The mean age, weight, body mass index, and fasting glucose of the participants was 42.30±7.43 (years), 81.68±12.44 (kg), 27.13±3.55 (kg/m2), and 107.80±28.54 (mg/dl), respectively. 56.9% and 18.9% of samples were overweight (BMI= 25.00–29.99 kg/m2) and obese (BMI ≥30 kg/m2), respectively. The prevalence of impaired fasting glucose was 22.1% in a single measurement. This study found the high prevalence of impaired fasting glucose. These persons should be carefully monitored. And, to promote health behaviors in such individual, tailored strategies should provide proper interventions.

Keywords:
prevalence, impaired fasting glucose, men

Paper ID: 40

Evaluation of maternal pre-pregnancy body mass index and gestational weight gain among Ardabil women

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Abstract:
Today, there has been an increasing focus on maternal pre-pregnancy overweight and obesity and excessive gestational weight gain. The aim of this study was to evaluate the maternal pre-pregnancy body mass index and gestational weight gain among 180 overweight or obese pregnant women in Ardabil. Pre-pregnancy body weight was collected through the participants' interviews. In addition, their body weight and height were measured by trained nutritionist during visit in the nutrition clinic to follow up the study and measure gestational weight gain. The pre-pregnancy body mass index was estimated as the standard formula using the self-reported pre-pregnancy weight. According to the pre-pregnancy body mass index, IOM guidelines was used for categorizing gestational weight gain as inadequate, adequate or excessive. According to pre-pregnancy body mass index, 31.8% of participants were overweight (BMI= 25.00–29.99 kg/m2) and 68.2% were obese (BMI $\geq$30 kg/m2) in this study. And, based on IOM guidelines, there were 5.5%, 18.7% and 75.8% of women who had inadequate, adequate and excessive gestational weight gain, respectively. Based on the results, it seems that strict weight control is required to prevent excessive gestational weight gain for women with increased pre-pregnancy body mass index. Even, weight control is recommended before pregnancy.

Keywords:
pre-pregnancy body mass index, gestational weight gain, women

Paper ID: 42

The long-term effects of postoperative radiotherapy in acromegaly: Results from IRAN Acromegaly Registry

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Abstract:

Abstract Purpose: Although rare, acromegaly is an intensive condition in which growth hormone hypersecretion results in metabolic changes. Multiple therapeutic procedures including surgery, pharmacotherapy, and radiotherapy might be employed. Radiotherapy (RT) provides disease management through biochemical control with or without combined medical therapy. The present investigation intended to assess the efficacy of conventional radiotherapy in postoperative acromegaly patients during 15 years of follow-up based on the precise cut-off criteria of cure. Methods: A retrospective analysis was undertaken in 55 cases of acromegaly followed for 13.5 ±2.5 yr., cured with conventional RT (average dose, 52 Gy) following pituitary surgery. Subjects were assessed for hormonal evaluations including basal and glucose-suppressed growth hormone (GH), IGF-1, and side effects of RT, for about 15 years.

Results: Basal GH concentration declined from 20·7 ± 7·0 µg/l to 11·2 ± 4·3 µg/l ($P < 0·001$), at 2 years and to 5.8 ±1.2 µg/l ($P < 0·001$) at 5 years and to 2.2 ±0.8 µg/l ($P < 0·001$) at 10 years after radiotherapy. The suppressed GH levels <1µg/l were achieved in 9% of patients after 2 years, 25% of patients at 5 years, 42% at 10 years, and 76% at 15 years. IGF-1 decreased to the normal range in 5% of subjects at 2 years, 14% at 5 years, 38% at 10 years, and 60 % at 15 years. After 10 years, 78% of patients developed hypogonadism, 80% hypothyroidism and 82% hypocortisolism. In 4% of patients neurological complications were observed 10 years after radiotherapy, and 4% developed visual impairment and optic neuropathy after 5 years of RT. Conclusion: The findings of the study advocate the application of conventional radiotherapy as an efficient strategy in the long-term control of patients with unsuccessful medical therapy and surgery. However, the high prevalence of late hypopituitarism has to be considered.

Keywords:

Acromegaly, conventional radiotherapy, Growth hormone, IGF-1, Radiotherapy

Paper ID: 43

Dysregulation of feed-forward loops and CeRNAs in stage I PTC unravels some regulatory aspects of PTC initiation

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Abstract:
Despite the indolent nature of most papillary thyroid cancer (PTC) cases, metastasis to locoregional lymph nodes or distant sites occurs for some of them. The molecular mechanisms of PTC initiation have partly been elucidated, however, its molecular basis at the gene regulation level remains largely unknown. Emerging evidence has revealed the role of the dysregulation feed-forward loops (FFLs) and competitive endogenous RNA (CeRNA) axes in cancer development in numerous cancers. In this study, we aimed to identify dysregulated FFLs and CeRNAs in the stage I PTC. The gene and miRNA expression data of 283 stage I PTC and 58 normal thyroid tissue was retrieved from the cancer genome atlas (TCGA) database. Differential gene and miRNA expression analysis was separately conducted between the stage I and normal thyroid tissues using the DeSeq2 package in R.4.3. MiRTarBase database was employed to obtain the gene-miRNA interactions with the reverse expressional level. Similarly, miRNA-LncRNA relationships were collected from LncBase_V2. We inspected the constructed regulatory network for FFLs and CeRNA axes. Fifteen cases of coherent type 1 FFLs and five cases of in-coherent type 1 FFLs were detected among the genes with aberrant expressions in stage I PTC. Several key cancer-associated TFs/genes with overexpression such as ESR1, E2F1, CCND1, CDKN1A, and MMP13 were frequently detected in the identified FFLs. Moreover, under expression of hsa-miR-206, and hsa-miR-193b were recognized as negative regulators of some of the identified FFLs. UCA1 and NR2F1-AS1 lncRNAs were also recognized as the negative regulators of hsa-miR-193b and has-miR-206 respectively, forming CeRNA axis playing a key role in the PTC initiation. Stage I PTC showed several dysregulated FFLs with critical roles in regulating several cancer-associated genes. Therapeutic targeting of the identified interconnected FFLs and CeRNAs may help to decelerate PTC progression in its initial stage. Disclosure: The authors declare no conflict of interest.

Keywords:
PTC initiation, FFLs, CeRNAs

Paper ID: 44

Effect of bread enriched with pomegranate peel powder on glycemic and lipid profile in Type 2 Diabetes Mellitus patients: A randomized double-blind control trial

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Abstract:

Background and aims: The high prevalence of type 2 diabetes mellitus (T2DM) is related to nutrient-poor diets that contain high amounts of refined carbohydrates with sedentary lifestyles. Pomegranates are a useful source of polyphenols and other antioxidants. Pomegranate peel powder (PPP) is rich in phenolic compounds. The aim of this study was to investigate the addition of PPP to bread evaluate the phenolic content and antioxidant activity of breads and compare the effects of the consumption of enriched bread with PPP on glycemic and lipid profiles in patients with type 2 diabetes. Methods: At first, to choose the best bread, five types of bread were prepared and the effect of their consumption on blood sugar was investigated. The powdered peel of the pomegranate was added to the bread using various percentages of 0, 1.5, 2.5, 3.5, and 5%. The phenol content, and antioxidant activity using DPPH were measured for dough and bread. PPP was tested for toxicity using the MTT method. Patients consumed bread for a total of 100 g/day. Then, 90 participants allocated in a randomized parallel placebo-controlled human intervention study were carried out to investigate the effect of consuming PPP(3.5%/day) incorporated into the bread on fasting blood glucose (FBS), glycosylated hemoglobin (HbA1c), insulin, and lipid profile.

Results: Twelve-week treatment with bread enriched with PPP showed a non-significant reduction in glycemia markers, lipid profile, anthropometric, and blood pressure. Conclusion: consumption of bread with PPP for 12 weeks among patients with type 2 diabetes doesn't have beneficial effects on glycemia and lipid markers. Human studies in this field are still small and need more attention that would help in understanding the preventive and protective roles pomegranate peel powdered has on diabetes.

Keywords:

Pomegranate, diabetes mellitus, glycemic, Lipid profile, peel pomegranate

Paper ID: 45

COULD PERSONALIZED MEDICINE PREDICT BARIATRIC SURGERY OUTCOMES?

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Abstract:

Background: Bariatric surgery recognized as the best therapy for severe obesity. Weight loss after surgery is, however, extremely variable and genetically influenced. Genome-wide association studies (GWAS) have identified many single nucleotide polymorphisms (SNP) related to weight, body fat proportion and additionally feeding behaviors. Objectives: The aim of this study was to research the effects of sequence variants and determined SNP on patient's responses to bariatric surgery. Methods: This review article summarizes studies that were investigating the influence of genetic polymorphisms in different effectiveness of bariatric surgery and weight loss pathways. Scopus and PubMed database were consistently searched up to January 2021, for GWAS studies providing knowledge relating to the genetic factors that have an effect on the bariatric surgery outcomes.

Results: The evidences from GWAS studies showed that many genes and SNPs affected the individual responses to bariatric surgery. the most of these SNPs is associated to genes that regulate the lipolysis/lipogenesis pathways, adipose cell metabolism, metabolic process chain, insulin resistance, insulin/glucagon metabolism, feeding behavior and appetite-sensing state. At this regard, rs16945088 SNP of FTO (fat mass and obesity-associated) sequence, MC4R (melanocortin 4 receptor), rs660339 (Ala55Val) SNP of uncoupling proteins 2 (UCP2), leptin receptor gene (Lys656Asn and Asn656Asn), gucagon-like peptide 1 receptor gene (rs6923761) and INSIG2 (insulin induced gene 2) are the most studied and affecting polymorphisms that have influence on bariatric surgery outcomes. Conclusion: Genetic background encompasses an important impact on weight loss after bariatric surgery. within the future, genetic testing could probably be employed in the pre-surgical assessment of patients with severe obesity for selecting the best surgery procedure for patients, avoiding supernumerary adverse effects and prices.

Keywords:

obesity Surgery, gastric Bypass, Single nucleotide Polymorphisms, Genome-Wide Association Studies, GWAS, SNP

Paper ID: 46

VITAMIN D3 AND IT'S ASSOCIATIONS WITH ADIPOSITY AND METABOLIC PARAMETERS IN PATIENTS WITH MORBID OBESITY

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Abstract:

Background: Vitamin D3 deficiency is associated with insulin resistance and metabolic syndrome. Although evidences are not consistent. Objectives: The aim of this study is to investigate the relationship between serum 25-hydroxy vitamin D3 (25(OH)D3) levels with some adiposity and metabolic indices related to metabolic syndrome. Methods: In this cross-sectional study, the anthropometric, body composition information and also, the clinical laboratory tests including fasting blood sugar (FBS), insulin, lipid profile, liver function test and serum 25(OH)D3 of 3750 morbid obese patients from the obesity clinic are extracted from Iran National Obesity Surgery Database. HOMA-IR and QUICKI was computed based on standard formula. Associations was tested using analysis of variance and Kruskal–Wallis tests.

Results: Approximately 69% of morbid obese patients had sub-optimal vitamin D3 levels (<30 ng/mL). An inverse significant relationship between serum 25(OH)D3 and body weight, body Fat percentage, waist and hip circumstance was observed (P-Value <0.05 for all). Low serum 25(OH)D3 levels are significantly associated with higher FBS and A1C, dyslipidemia (higher LDL and TG) and also elevated level of Liver function enzymes (P-Value <0.05 for all). Moreover, the patient with the higher serum 25(OH)D3 had lower level of HOMA-IR and higher Insulin sensitivity (QUICKI index); although this association was not statistically significant. Conclusion: Vitamin D3 deficiency has been associated with obesity, impaired Glucose metabolism and metabolic disorders related to insulin resistance. So, vitamin D3 supplementation could be a potential approach in treatment or decrees the metabolic complication of obesity before and after bariatric surgery.

Keywords:

Vitamin D3, Morbid Obesity, Adiposity, Metabolic syndrome, Bariatric surgery

Paper ID: 47

THE POTENTIAL ROLE OF BARIATRIC SURGERY ON WHITE TO BRAWN/BEIGE ADIPOSE TISSUE CONVERSION

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Abstract:

Background: Bariatric surgery is an effective treatment for obesity causing changes in energy expenditure. Brown adipose tissue (BAT) is an energy-related organ, and the potential effects of bariatric surgery are yet to be investigated. While alterations in gut-brain communication are increasingly implicated in the improved eating behavior, less is known about the mechanistic basis for energy expenditure changes. Brown adipose tissue (BAT) and beige adipose tissue (BeAT) have emerged as major regulators of whole-body energy Expenditure in humans. Objective: The present review aims to understand the possible effects of BS on the main determinants of adipose tissue thermogenesis and present scientific evidence showing the alteration of cellular adipose tissue energy expenditure indicators after bariatric surgery. Methods: This review article summarizes studies that were investigating the influence of different type of bariatric surgeries on volume and/or activity of BAT and BeAT thermogenesis. Scopus and PubMed database were consistently searched up to Feb 2023, for animal and human studies providing knowledge relating to the effects of bariatric surgery on adipose tissue related energy expenditure and BAT and BeAT volume and activity.

Results: In this review, we discuss the steadily growing evidence from preclinical and clinical studies suggesting that Roux-en-Y gastric bypass (RYGB) and sleeve gastrectomy (SG), the two most commonly performed bariatric surgeries, enhance BAT/BeAT thermogenesis. The rodent and human studies suggested that RYGB mainly enhances BeAT thermogenesis while SG mainly enhances BAT thermogenesis. RYGB may increase BeAT thermogenesis through a UCP1-independent, PLIN1/2- and UCP2-dependent mechanism involving PLIN1-mediated fatty acid transfer from lipid droplets to UCP2. Conclusion: Bariatric surgery may increase BAT and BeAT volume and activity, thus improving post-op body energy expenditure. These effects may play a role in the improvement of whole-body insulin sensitivity leading to long-term increased overall metabolic health. Further experiments are essential in order to verify these effects

Keywords: Brown adipose tissue, thermogenesis, Basal metabolic rate, Resting energy expenditure, Obesity surgery.

Paper ID: 48

A higher risk of type 2 diabetes mellitus and overweight in female offspring of women with androgen excess during their pregnancy period: A long-term population-based follow-up study

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Abstract:
Adverse intrauterine environment may predispose offspring to cardio-metabolic diseases in their later life. In the present study, we aimed to examine the effects of maternal androgen excess on cardio-metabolic risk factors in female offspring in their later life. This cohort study included 211 female offspring who exposed to maternal androgen excess during their prenatal life and 757 non-exposed female offspring (controls). Both groups were followed from baseline to the date of incidence of events, censoring, or end of the study period, whichever came first. Age scaled unadjusted and adjusted cox regression models were applied to assess the hazard ratios (HR) and 95% confidence intervals (CIs) for the association between maternal androgen excess and pre-diabetes (pre-DM), type 2 diabetes mellitus (T2DM), overweight and obesity in female offspring of both groups. Statistical analysis was performed using the software package STATA; significance level was set at $P < 0.05$. The results of this study showed a higher risk of T2DM (unadjusted HR 2.67, 95% CI 1.33–5.36) and overweight (unadjusted HR 1.41, 95% CI 1.06–1.88) in female offspring who exposed to maternal androgen excess, compared to non-exposed ones. Results remained unchanged after adjustment for confounding variables including body mass index, education, physical activity, mother's age at delivery, birth weight, and childhood obesity. However, no significant difference was observed in the risk of pre-DM and obesity in female offspring with maternal androgen excess, compared to controls in both unadjusted and adjusted models. The present study with a long-term follow-up revealed that maternal androgen excess increases the risk of developing T2DM and being overweight in female offspring in later life. Further long-term population-based studies are needed to confirm our results.

Keywords:
Maternal androgen excess, Type 2 diabetes mellitus, Overweight, Offspring

Paper ID: 50

LC-MS/MS-based profiling of serum amino acids and acylcarnitines in people with type 2 diabetes mellitus and critical limb ischemia

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Abstract:
Type 2 diabetes mellitus (T2DM) accelerates critical limb ischemia (CLI), an advanced stage of peripheral artery disease (PAD), resulting in poor long-term survival. The early and improved diagnosis of CLI in T2DM is urgently needed to reduce the adverse effects of the disease. We aimed to identify metabolic biomarkers to improve CLI screening in T2DM. We studied amino acids and acylcarnitines profiles in serum samples of 108 T2DM people with CLI (n=19, G2) and without CLI (n=45, G0: no lower limb stenosis (LLS) and n=44, G1: LLS<50%), using liquid chromatography with tandem mass spectrometry (LC-MS/MS) approach. Multivariate analyses were used to analyze data, including principal component analysis (PCA), partial least squares-discriminant analysis (PLS-DA), and significant tests. The patients in the G1 group were projected on the score plot of the PLS-DA model using the rotation matrix with all studied metabolites. The Kruskal-Wallis test was performed to compare the relative abundances of the selected set of metabolites between groups. The PCA score plot showed a slight difference between the distributions of the G0 and G2 groups using all amino acids and acylcarnitines as independent variables. We observed a significant difference between G0 and G2 groups in the PLS-DA score plot with all variables. Based on the PLS-DA model, we identified the top 20 amino acids and acylcarnitines with high variable importance in projection (VIP) that could discriminate between G2 and G0. The accuracy of the PLS-DA model for the test set samples in the G0 and G2 groups was 0.80 and 0.86, respectively. Out of 44 samples belonging to G1, 28 samples (64%) were projected closer the G0 group, while 16 (36%) samples were close to the G2 group. Moreover, the probability test results revealed that 26 samples (60%) of G1 samples were closer to the G0 group and 14 (32%) samples were closer to the G2 group. Amino acids and acylcarnitines alterations are associated with CLI in T2DM. Future studies are needed to explore the role of potential metabolic biomarkers to predict CLI in asymptomatic people with T2DM and with lower limb stenosis.

Keywords: Targeted metabolomics, LC-MS/MS, Diabetes, Peripheral arterial diseases (PAD), Critical limb ischemia (CLI).

Paper ID: 51

A case of Langerhans cell histiocytosis presenting as central diabetes insipidus

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Abstract:

Background: central diabetes insipidus (CDI) can occur secondary to a large variety of genetic, immunologic, inflammatory, infectious and structural conditions; Careful follow-up is necessary in unknown cases, and a biopsy should be performed when symptomatic pituitary enlargement is observed during the clinical course. We report a case of CDI and pituitary stalk mass, with an unknown diagnosis, with the tumor progression toward hypothalamus; finally definitive diagnosis Langerhans cell histiocytosis (LCH) was made by surgery and pathology. Case presentation: the case was a 27-year-old Iranian female presented to the endocrinology clinic because of amenorrhea, polyuria, polydipsia after giving birth. Based on the laboratory findings of central hypogonadism and CDI, Brain MRI was requested, which showed 8.5 × 4 mm lesion in pituitary stalk; all investigations performed to rule out the common causes for CDI; no specific cause was identified ; chest radiograph was normal ; the serum erythrocyte sedimentation rate (ESR) , human chorionic gonadotrophin (hCG), Alpha-fetoprotein (AFP) , acetylcholine esterase (ACE), IgG4 and Antinuclear antibody were within normal limits; Lumbar cerebrospinal fluid (CSF) cytology for malignancy , AFP and hCG were negative. In spite of extensive investigations, no definitive etiology for the CDI, it was decided to regular follow-up and replacement therapy with nasal desmopressin spray and estrogen , progesterone. After the covid 19 pandemic, the patient lost to follow – up and after two years, she was referred with worsening headache and blurred vision with an increase in the size of the lesion; so after re-evaluation, the decision to undergo surgery and biopsy for diagnosis was confirmed and the result was LCH. After confirming the diagnosis and oncology consultation , PET scan requested ; which showed, multifocal involvement; so the patient was planned for chemotherapy initially treated by prednisolone and cytarabine (100mg/m2 per dose in 5days per month) ; Currently, the patient is in remission. Conclusion : although adult-onset LCH is rare, it should be considered a differential diagnosis in cases of central diabetes insipidus as the primary disease and direction of changing CNS lesion from pituitary to suprasellar extension might be a unique MRI finding in LCH.

Keywords:

Central diabetes insipidus , Langerhans cell histiocytosis, Pituitary stalk mass

Paper ID: 52

Pituitary Metastasis presenting with right eye ptosis

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Abstract:

Background: Metastatic involvement of the pituitary is a rare condition seen in <2% of resected pituitary masses ; the clinical presentation is heterogeneous and associated with poor prognosis. Case presentation: We report an 87-year-old man was referred to the endocrinology clinic by his neurosurgeon with the complaint of ptosis in the right eye. The MRI findings were suggestive of a pituitary macroadenoma with a right cavernosal extension (Knosp 4). The patient had no history of any disease or medication. In physical examination, no sign of Acromegaly or Cushing disease was detected. According lab tests and radiological finding , underwent Endoscopic Transsphenoidal Surgery (ETSS) with the diagnosis of non-functional pituitary adenoma. After surgery, he was discharged with good condition, without any sign of diabetes insipidus. The pathology revealed a metastatic high-grade neuroendocrine tumor carcinoma, probably of lung origin with a Ki67 index of 40-50%; the immunohistochemistry study of the tumor was negative for pituitary markers ,S100 and HMB45; but positive for chromogranin , CK7 , synaptophysin and TTF-1. With respect to the pathology results, lung and abdominopelvic CT scan was requested and diffused small subpleural nodules in both lungs with an 11mm nodule in the apical segment of the right upper lobe and two nodules in the left upper lobe were observed .The patient has no sign of pulmonary, adrenal, or carcinoid disease. Laboratory results concerning adrenal function and 5-Hydroxyindoleacetic Acid (5HIAA) urine test were normal , except positive serum chromogranin-A (CgA). After confirming the diagnosis and oncology consultation , FDG-PET scan requested ; which showed ; multiple hypermetabolic pleural based small sized nodules were seen in left hemithorax as well as a hypermetabolic subpleural nodule in right lung apex. The patient was planned for chemotherapy according metastatic neuroendocrine tumor by suspicious origin of lung; initially treated by Temozolomide and radiotherapy ; Unfortunately, she died six months after the initial diagnosis of pneumonia and respiratory failure resulting from Covid-19. Conclusion: This case report highlighted uncommon findings associated with Pituitary metastases derived from neuroendocrine neoplasms ; therefore, heightened awareness of the possibility of metastatic pituitary lesion is important.

Keywords: Pituitary adenoma , Pituitary Metastasis, Neuroendocrine neoplasm

Paper ID: 53

Evaluation of risk factors associated with therapeutic response, recurrence, and mortality in patients with thyroid cancer in Hamadan Endocrinology Clinic 2011-2022

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Abstract:

Introduction: Thyroid carcinoma (TC) is a global clinical concern and its incidence has progressively increased worldwide in the last decades. Early detection of TC and subsequently decreased age at the diagnosis has seemed to be clearly a result of extensive employment of imaging modalities, biopsy techniques, and improvements in healthcare surveillance. Material and methods: In this study, we investigated 400 patients diagnosed with TC, confirmed by histopathological investigations following thyroidectomy at our specialist endocrinology clinic, and followed them meticulously from January 2011 to December 2022. The main evaluated variables in the current study included patients' demographic characteristics, clinical data, histopathological findings, treatment, therapeutic response, recurrence and mortality.

Results: There were 77 (19.25%) men and 323 (80.75%) women, and their mean age was 41 ± 15.58 years. The risk of both mortality and recurrence was significantly higher in patients > 65 years, with a family history of thyroid cancer or radiation exposure to the neck or head, mutual cervical adenopathy, multifocality, lymphoid malignancy, structural incomplete response to treatment and stage IVb ($P < 0.05$). Each additional year of life was associated with a 21% increase in the risk of death (AOR: 1.21, 95% CI: 1.1, 1.34, $P < 0.001$) and a 3% increase in the probability of relapse increases (AOR: 1.03, 95% CI: 1.008, 1.06, $P = 0.009$). Smoking was associated with a 4.36-fold increase in the risk of mortality ($P = 0.05$). Patients in stage IVa (OR: 7.31, 95% CI: 1.04, 12.70) ($P < 0.05$) and individuals classified as moderate and high-risk also have a significantly higher mortality risk ($P < 0.01$). In addition, the probability of relapse was 4.73 times higher in men ($P < 0.001$), 13.29 times higher in patients with euthyroidism ($P = 0.033$) and significantly higher in patients at the T3 and T4 stages ($P < 0.01$). In addition, the probability of relapse was significantly higher in patients with stage N1a and N1b ($P < 0.001$). Conclusion: In order to employ the proper therapeutic intervention and perform a meticulous postoperative follow-up, it is crucial to take the predictive influence of mentioned particular factors into consideration.

Keywords: therapeutic response, recurrence, mortality, thyroid cancer

Paper ID: 55

Is there a real association between inadequate sleep hygiene and metabolic disorders? A community-based study on older adult participants in Birjand Longitudinal Aging Study (BLAS)

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Abstract:
Sleep disorders and metabolic abnormalities are significant health concerns among older adults, and there is growing recognition of their potential relationship, co-occurrence, and underlying mechanisms. This study aims to investigate the association between sleep disorders and metabolic syndrome in the elderly population. A total of 1347 participants were included in this analysis from a larger sample of 1420 individuals aged 60 years and above, randomly selected through cluster sampling in Birjand, Iran. The Pittsburgh Sleep Quality Index (PSQI) was utilized to assess sleep duration, pattern, and quality using seven selected questions. The diagnosis of metabolic syndrome (MetS) was established based on the Adult Treatment Panel III (ATP III) criteria. The association between sleep and metabolic variables was examined using both uni- and multiple logistic regression models. The study included 1347 participants aged 60 years and above. Among the sample group, 51.12% (n=702) were women. Metabolic syndrome was diagnosed in 702 (52.11%) of the participants. The MetS group exhibited significantly lower sleep quality and satisfaction compared to the non-MetS group (P=0.012 and P=0.032, respectively). In the multiple logistic regression models, women with very good sleep quality had a lower risk for MetS (OR=0.23, 95% CI: 0.06-0.91, P=0.036). In conclusion, sleep disorders in older adults may be associated with metabolic imbalances.

Keywords:
Metabolic Syndrome, Sleep, Aged, Body Mass Index, Blood Pressure

Paper ID: 56

Study on the effects of pistachio soft skin Ethyl acetate extract on diabetic male rats bearing

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Abstract:
Background and Aim: Diabetes is one of the causes of infertility in men. This study was performed to evaluate the effects of alcoholic ethyl acetate extract of pistachio soft skin on serum testosterone levels, biochemical factors and testicular tissue in diabetic male mice. Method: In this experimental study, 45 male Wistar rats with a single dose of streptozotocin (65 mg/kg body weight) developed type 1 diabetes mellitus. 3 groups including 15 rats were divided: group 1 (control group: for 3 weeks and once a day administration of dimethyl sulfoxide 2.5% orally (gavage), group 2 (positive control group: for 3 weeks and once a day insulin injection at the rate of 2 to 4 units), Group 3 (for 3 weeks and once a day Pistachio soft skin extract at a dose of 1 g/kg body weight was given orally (gavage). Then, the number of cells in the process of spermatogenesis and the levels of testosterone, FSH and LH were measured. The data were analyzed by SPSS soft ware.
Results: The results of the present study showed that there was a statistically sig nificant difference between the number of spermatogonium, spermatids, Sertoli and primary spermatocytes in the control group (diabetes) and the insulin group and the pistachio soft skin groups ($p < 0.05$). There was also a significant difference between the number of spermatid cells in the insulin group with the pistachio soft skin ($p < 0.05$). Also, there was a significant difference between the number of spermatogonia cells in pistachio soft skin group ($p < 0.05$). There was a statistically significant difference between the fertility rate in pistachio soft skin groups ($p < 0.05$). Increased levels of testosterone, FSH and LH also showed a statistically significant difference between each of the four groups ($p<0.001$).
Keywords:
pistachio soft skin, diabetes mellitus, bearing, male rat.

Paper ID: 57

Evaluation of changes in biochemical parameters and bone mineral densitometry (BMD) following parathyroidectomy in patients with primary hyperparathyroidism: A retrospective cohort study

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Abstract:
This study was designed to investigate changes in bone mineral densitometry (BMD) in primary hyperparathyroidism patients who had undergone parathyroidectomy. This study was a retrospective cohort study and the study samples included two groups. The main group included 20 patients who referred to the Endocrine Clinic of Imam Reza Hospital in the period of 2017-2018 and underwent parathyroidectomy surgery after confirming primary hyperparathyroidism. The control group of the study was also 10 patients, which 2 patient had no indications for surgery and 8 patients did not consent to the surgery, and these people were under follow-up. In addition to measuring BMD changes, the biochemical parameters such as the serum levels of calcium, phosphorus, creatinine, 25(OH) D, albumin and PTH were also measured and compared with pre-operative values. The results of this study showed that in the main group, the levels of 25(OH) D and phosphorus increased significantly after 2 years ($p<0.001$). The amount of calcium and PTH also decreased ($p<0.001$). Moreover, the changes of the parameters after two years in the control group were not statistically significant. In the main group, T-score and Z-score significantly increased compared to pre-operative values in the area of lumbar vertebrae ($p<0.01$)). In the distal region of the radius, the T-score increased significantly ($p<0.05$) and the Z-score increase was at the border of significance ($p=0.048$). The parameters had a non-significant increase in the femoral neck. It was concluded from this study that in patients with primary hyperparathyroidism, two years after parathyroidectomy, and the BMD had a clear improvement and the levels of biochemical parameters reached the normal level, and the improvement occurred mostly in the areas of the lumbar vertebrae and the distal radius.

Keywords:
Hyperparathyroidism, Parathyroidectomy, Bone mineral densitometry (BMD), Biochemical parameters

Paper ID: 58

Diabetic Markers, Five Years after Bariatric Surgery

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Abstract:

Background: Bariatric surgery delivers substantial weight loss for obese patients with comorbidities like diabetes mellitus. The present research aimed to investigate the impacts of bariatric surgery on diabetic markers after five years of follow-ups. Methods: This is a retrospective study on diabetic patients with a history of bariatric surgery between 2016-2017. The diabetic markers before and five years following surgery including a lipid profile, glucose level, and the required antidiabetic medications were evaluated.

Results: 34 consecutive patients were included, 30 (88.2%) females, with a mean age of 52.71 ± 8.53 years. The majority (65%) of surgeries were R-Y gastric bypass, and the remaining were one anastomosis gastric bypass and sleeve gastrectomy. The Diabetic markers serum level reduced during follow-up (P=0.001), except high-density lipoprotein levels and serum total cholesterol were increased (P=0.011, P=0.838). Low-density lipoprotein levels reduced but it was insignificant (P=0.194). Surgery Types had affected the changes of diabetic markers (P>0.05). Demanding for oral medication was reduced significantly, but insulin injection reduction was not significant (p=0.006 and P=0.099, respectively). Conclusion: Our study showed favorable bariatric surgery results on diabetic patients in long term follow-up. However, dyslipidemia is still concerning.

Keywords:

Bariatric Surgery, Diabetes Mellitus, Morbid Obesity, R-Y Gastric Bypass, Sleeve Gastrectomy, One anastomosis single Bypass

Paper ID: 59

The association of postoperative eating behavior with anthropometric and body composition outcomes following sleeve gastrectomy

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Abstract:
Eating behavior, as one of the lifestyle factors, can compromise the effectiveness of bariatric surgery. Due to conflicting results among dietary behaviors and anthropometric indices and a lack of studies examining this association with postoperative body composition, this study aimed to investigate the relationship between eating behaviors and anthropometric and body composition outcomes after sleeve gastrectomy (SG). A total of 146 adults who had laparoscopic SG approximately 24 months ago were included in this cross-sectional study. The Dutch Eating Behavior Questionnaire (DEBQ) was used to evaluate eating behavior across three dimensions: emotional, external, and restraint eating. Emotional eating was also divided into two subgroups: diffuse emotions and clearly labeled emotions. Participants' responses on a 5-point Likert scale (ranging from 1 for 'never' to 5 for 'very often') were summed to obtain the raw score for each dimension. These raw scores were then divided by the number of items in each dimension, resulting in equally weighted scores. Age, sex, preoperative weight, postoperative time, occupation status, smoking, marital status, education, physical activity, vitamin B supplement, and energy intake were selected as potential confounding factors based on a literature review. Linear regression was employed to investigate the relationship between eating behaviors and % total weight loss, fat mass loss, and fat-free mass loss. The association between eating behaviors and the odds of non-response (TWL < 25%) was assessed using logistic regression. In this study, 77.4% of the participants were women. The mean ± standard deviation for age and time since surgery was 43.6 ± 12.1 years and 30.8 ± 6.28 months, respectively. The results showed that each 1-unit increase in restraint eating was associated with lower odds of non-response in the fully adjusted model (OR = 0.943; 95% CI = 0.896, 0.994). In relation to postoperative body composition, a higher score in external eating was associated with greater fat-free mass loss (β = 0.17, p = 0.026) after adjusting for all potential covariates. To achieve the optimal postoperative outcome, the study suggests evaluating and modifying patients' eating behaviors, particularly in the medium to long term after surgery.

Keywords:
Bariatric surgery, Dutch eating behavior questionnaire, Emotional eating, Weight, Body composition, Fat free mass

Paper ID: 61

Thyroid evaluation in COVID-19 patients: A two-months longitudinal study

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Abstract:
Corona disease (COVID-19) has been associated with significant deaths worldwide. The thyroid gland plays an effective role in improving the functioning of the immune system and metabolism. So far, the interaction between euthyroid sick syndrome (ESS) and the severity of COVID-19 has not been determined. This prospective study investigated the relationship between thyroid function and severity of COVID-19 during a 2-month follow-up. Patients with COVID-19 (aged 15 to 75 years old) who were referred to Ganjovian Dezful Hospital in 2022 were divided into two inpatient and non-inpatient groups and then divided into four subgroups: mild, moderate, severe, and critical. Thyroid hormones, inflammatory, and biochemical indices in relation to the severity of COVID-19 were investigated at the beginning of the visit and two months later. Among 174 patients, 133 patients in mild (n=17) and moderate (n=116) stages were followed after two months. Severe and critical patients did not have the 2-month follow-up due to death or the severity of the disease. The frequency of ESS in mild and moderate patients was zero and 42.85% respectively. In the Moderate groups, 15 patients (11.27%) showed ESS even after two months of follow-up. As the severity of COVID-19 increased from mild, moderate, severe to critical, the TSH (2.121±0.08, 1.788±0.06, 1.622±0.06, 1.400±0.05 mIU/L, $p<0.05$) and consequently thyroid hormones decreased. Furthermore, the inflammatory CRP and ESR markers were increased. Considering the pathogenesis of ESS affected by different clinical stages of COVID-19 and had a reciprocal interaction, thyroid hormone testing is recommended for COVID-19 patients. Thyroid profile assay may become a simple tool for stratified management of patients with severe COVID-19. Declarations: In this study written informed consents were obtained from participants and all procedures were in accordance with the principles expressed in the Declaration of Helsinki; the proposal of the present study was approved by the ethical committee of Dezful University of Medical Sciences (DUMS), Dezful, Iran (Ethic code: IR.DUMS.REC.1401.079).

Keywords:
COVID-19, Thyroid, Euthyroid Sick Syndrome, Severity

Paper ID: 63

Anti-TPO as Potential Biomarker for Thyroid Cancer and Hashimoto's Thyroiditis: An Integrated Transcriptomic and Systematic Review Meta-Analysis

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Abstract:
Hashimoto's thyroiditis, characterized by anti-thyroid peroxidase (anti-TPO) antibodies, frequently coexists with thyroid cancer diagnosis, hinting at a potential shared molecular mechanism. Given the escalating global prevalence of thyroid cancer and its inherent diagnostic challenges, clarifying this association is crucial. Our study aims to discern whether anti-TPO might be a biomarker for both conditions. Using RNA-Seq data from the Gene Expression Omnibus (GEO) dataset, we examined gene expressions in three cohorts: thyroid cancer patients with Hashimoto's (W) and without Hashimoto's (WO) and a control group (C). The top differentially expressed genes (DEGs) were functionally annotated using GProfiler. We further conducted a systematic review meta-analysis on the association between anti-TPO antibody levels and thyroid cancer risk using data from PubMed, Google Scholar, Web Of Science, and Scopus. We analyzed 45 studies with 39,217 patients using binary and quantitative methods. Our gene expression analysis identified distinct patterns across the cohorts: 205, 556, 11 downregulated genes, and 528, 645, and 39 upregulated genes for W vs. C, WO vs. C, and W vs. WO, respectively. However, both thyroid cancer groups (W and WO) displayed similar expression profiles compared to controls. Furthermore, downstream analysis identified a single miRNA interacting with two genes (LIPA, CLEC12A), both associated with anti-TPO. In assessing various cut points, anti-TPO levels consistently indicated an increased risk of thyroid cancer. Using a random-effects model, cut points in IU/mL of 5.61, 20, 35, 50, 60, 100, and 500 yielded odds ratios (95% CIs) of 2.12 [1.83-2.45], 3.72 [2.53-5.47], 1.58 [0.76-3.32], 1.28 [0.86-1.91], 1.41 [1.10-1.81], 2 [1.60-2.50], and 5.54 [1.52-20.23], respectively. In Bayesian odds ratio meta-analysis, estimations with 95% credible intervals for the same cut points were 2.08 [1.38, 2.94], 3.82 [1.84, 8.25], 1.52 [0.79, 3.06], 1.27 [0.79, 2.18], 1.40 [0.95, 2.13], 1.97 [1.30, 2.94], and 5.47 [1.63, 18.03]. By integrating molecular data with a systematic review meta-analysis, our study underscores the potential of anti-TPO as a key biomarker for thyroid cancer and Hashimoto's. Our results encourage further research to solidify these initial insights and open new therapeutic windows.

Keywords:
Thyroid Cancer, Hashimoto's Thyroiditis, Anti-Thyroid Peroxidase (Anti-TPO), Biomarker, Systematic Review Meta-Analysis, Differentially Expressed Genes (DEGs)

Paper ID: 64

Evaluation of the prevalence of cardiometabolic disorders (diabetes, hypertension, and hyperlipidemia) diagnosed, undiagnosed, treated, and treatment goal in the elderly: Bushehr Elderly Health Program (BEH)

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Abstract:
As the population ages, the global burden of cardiometabolic disorders will increase. This study aimed to investigate the prevalence of cardiometabolic disorders (diabetes, hypertension, and hyperlipidemia) in elderly and to evaluate the effects of various variables including age, sex, education, marital status, smoking, income, physical activity, dementia, and depressed mood on untreated cardiometabolic disorders. This was a cross-sectional study conducted in Bushehr Elderly Health Program. A total of 2381 participants were included. Medical data were collected by trained interviewers. The mean age of the study participants was 69.34 years. Proportions of diabetes, hypertension, hyperlipidemia, and hypercholesterolemia were 43.25%, 75.71%, 64.74%, and 35.31% respectively. Untreated diabetes prevalence was higher for males (OR=1.60, 95%CI=1.20-2.15) and older adults (OR=1.02, 95%CI=1.00-1.05). Males (OR=2.16, 95%CI=1.64-2.84) and smokers (OR=1.48, 95%CI=1.09-2.00), in contrast to married participants (OR=0.25, 95%CI=0.08-0.78), people with higher education levels (OR=0.51, 95%CI=0.29-0.89) and dementia (OR=0.78, 95%CI=0.61-1.00) were more likely to have untreated HTN. Untreated dyslipidemia is more common in smokers (OR=1.78, 95%CI=1.19-2.66) and males (OR=1.66, 95%CI=1.21-2.27), while untreated hypercholesteremia is more common in males (OR=3.20, 95%CI=1.53-6.69) and is reported lower in people with dementia (OR=0.53, 95%CI=0.28-1.01).

Keywords:
Diabetes, Hypertension, Hyperlipidemia, Elderly

Paper ID: 66

A systematic review on childhood obesity and infertility in later life

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Abstract:
The global prevalence of childhood obesity has exhibited a troubling surge in recent years. Due to the raised questions regarding its potential correlation with infertility in adulthood, this systematic review has been undertaken to explore the complex relationships between childhood obesity and their potential associations with infertility later in life. In this systematic review, a comprehensive search was performed in some international databases (PubMed, Web of Science, and Scopus) using relevant keywords until April 2022. All cohort studies which assessed the association of obesity in children and adolescents with male and female infertility indicators in later life were included. The quality of the included studies was assessed by the Newcastle-Ottawa quality assessment checklists. Out of a total of 32,084 documents that were initially identified through the search process, a meticulous selection procedure resulted in the inclusion of ten eligible studies. Regarding the number of offspring, five studies focused on this aspect. Obese women were less likely to have any children, even after excluding women with PCOS and similar trends were observed for obese men. Obesity at young age independently raised the risk of menstrual problems, while also increasing the risk of hypertension during pregnancy. Obesity in men during their 20s was linked to an elevated risk of low sperm motility and poor sperm morphology, emphasizing the potential impact of obesity on male reproductive health. The evidence suggests a positive association between childhood obesity with infertility indicators in later life. Childhood weight reduction strategies are suggested to be implemented in the societies in order to reduce infertility rate in later life.

Keywords:
Childhood obesity, Fertility, Infertility, Systematic review

Paper ID: 67

The association between vegetarian diet and sex hormones levels and fertility: A systematic review and meta-analysis

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Abstract:
An increasing number of people have adhered to a vegetarian diet for several years. Nowadays, the favorable effect of this dietary pattern on metabolic diseases is well established, but its impact on fertility and reproductive health as a serious health concern is not clear yet. Therefore, we aim to summarize existing evidence regarding the possible association between a vegetarian diet and fertility as measured by key indicators such as sperm quality and sex hormone levels. We systematically searched online databases, including PubMed, ISI, Scopus and Google Scholar, up to December 2022 using relevant keywords. We included observational studies that compared semen quality, sex hormone levels and infertility in people who adhered to a vegetarian diet versus an omnivore diet. Heterogeneity between studies was assessed using I2 and Q tests. Standardized mean differences (SMD) using random/fixed models were calculated to assess outcomes between vegetarians and omnivores in included articles. Finally, out of 972 documents that were retrieved, 20 articles met our inclusion criteria, and 16 were eligible for quantitative synthesis. Results of meta-analyses showed that there were no significant differences between vegetarians and omnivores in terms of semen quality parameters, including total sperm count, total and progressive sperm motility, sperm morphology and sperm concentration. Seven studies on female sex hormone profiles were eligible for meta-analysis. The only significant difference was the lower level of plasma oestrone in vegetarians (pooled SMD: −0.56; 95% confidence interval [CI]: −1.08, −0.05; Pvalue = 0.03) compared to omnivores. Furthermore, our meta-analysis revealed significantly higher sex-hormone-binding globulin levels in vegetarian men than in omnivores (pooled SMD: 0.52; 95% CI: 0.18, 0.86; Pvalue = 0.002). Despite the numerous health benefits of a vegetarian diet, our review suggested that there were no conclusive associations between vegetarian diet and semen quality and infertility. Further studies are recommended to better understand vegetarian dietary pattern effect on infertility and reproductive health.

Keywords:
Vegetarian diet, Reproductive health, Semen quality, Sex hormones, Infertility, Systematic review

Paper ID: 68

The Diagnostic Value of BRAF Mutation in Bethesda III Thyroid Nodules

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Abstract:
The Bethesda system is a widely used classification system to provide standardized categories to describe the cytological findings of thyroid nodule fine-needle aspiration (FNA). Yet, there is a controversy in the management of the thyroid nodules classified as Bethesda III and IV. The current study was designed to define the diagnostic value of BRAF-V600E mutation in the FNA sample with Bethesda III. A total of 41 patients with confirmed Bethesda III in FNA were enrolled in this study. The sonographic findings of 24 out of 41 patients were available. The BRAF-V600E mutation was checked in FNA samples and its diagnostic value was compared with the post thyroidectomy pathology results. According to the pathology results, 18 out of 41 cases (43.9%) were malignant. Positive result in BRAF-V600E mutation analysis was observed in only one malignant case (2.4%). The sensitivity, specificity, positive predictive value, negative predictive value, and accuracy of BRAF-V600E mutation were 5.6%, 100%, 100%, 57.5%, and 58.5%, respectively. In addition, a specific variants of BRAF gene was also reported in five cases (12.2%) (2 malignant and 3 benign).While the sensitivity, specificity, positive predictive value, negative predictive value and accuracy for BRAF variant were reported as 11.11%, 86.96%, 40%, 55.55%, and 53.66% respectively. BRAF-V600E mutation was found to be uncommon in malignant thyroid nodules categorized as Bethesda III. According to our findings, relying solely on BRAF-V600E mutation may not improve the diagnostic accuracy of FNA in these patients.

Keywords:
Diagnostic value, papillary thyroid cancer, BRAF-V600E mutation, thyroid nodule, Bethesda III

Paper ID: 74

Association between glycated hemoglobin (HbA1c) and the lipid profile in patients with diabetes mellitus referred to the diabetes clinic of Kosar Hospital in Semnan during the year 2021

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Abstract:

Background: Diabetes mellitus is a metabolic disease that is considered as a significant health problem worldwide. The aim of this study was to determine the relationship between HbA1c and lipid profile in diabetic patients. Patients and Methods: In a cross-sectional study all diabetic patients referred to the endocrinology clinic of Kowsar Hospital were enrolled. Demographic data including age, gender, duration of diabetes, type of therapy recorded in data sheet. In addition, laboratory tests results including lipid profiles (LDL, HDL, TG and Total Chol), FBS and HbA1c) were recorded. Data analyzed in SPSS 24 at signicant level less than 0.05

Results: Totally, 380 patients were enrolled. The mean age of patients was 59.20 years with an age range of 15 to 81 years and 39.5% (150 patients) were men The mean duration of patients was 8.22 years. The mean FBS of patients was 165.72. The mean HbA1c of patients was 8.386 with a range of 5.8 to 13.5. According to the results of ANOVA test, HbA1c level was not related to gender (P = 0.170). Based on the results of ANOVA test, the amount of HbA1c was related to the type of treatment (P <0.001). The difference between the groups that receive both types of treatment, in which the rate of diabetes control is significantly weaker than the other two groups. No significant correlation observed between age and duration of diabetes with HbA1c. However, a significant correlation was observed between HbA1c and fasting glucose, cholesterol, triglyceride, LDL and HDL, which was the strongest correlation with fasting glucose. Based on the results of the reduced regression model, the increase in HDL (P = 0.023) and LDL (P = 0.019) are both associated with an increase in HbA1c independently. Conclusion :Based on the results of the present study, the type of treatment is very effective in controlling HbA1c. On the other hand, HbA1c correlates with lipid profile factors such as total cholesterol, triglycerides, LDL and HDL, which in turn can lead to metabolic and cardiovascular complications. Therefore, HbA1c can be used as a predictor for estimating fat disorders and Use their side effects.

Keywords:

Diabetes, HbA1c, Total cholesterol, Triglycerides, LDL,

Paper ID: 75

Relationship between subclinical hypothyroidism and distal-symmetric diabetic polyneuropathy in type 2 diabetes mellitus referred to Kosar Hospital in Semnan and related indicators in 2019–2020

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Abstract:

Introduction: Diabetes is one of the most common metabolic diseases and one of its important complications is diabetic neuropathy. Due to the relationship between diabetes and thyroid disorders, the present study was performed to determine the association between subclinical hypothyroidism and end-stage diabetic polyneuropathy in patients with type 2 diabetes. Materials and Methods: In this descriptive, analytical study, 154 patients with type 2 diabetes referred to Kosar Hospital in Semnan were evaluated. After recording their demographic information, samples were received for biochemical testing. The patients' neuropathy was then evaluated based on the United Kingdom screening test (UKST). The results were recorded in the data collection form and then analyzed using SPSS Statistics 22 software.

Results: In this study, 154 patients were studied, including 49 with subclinical hypothyroidism and 105 with euthyroid. The results of the present study showed that the mean age of patients in the subclinical hypothyroid group was 60.08 years and in the euthyroid group was 60.77 years. Mean ± standard deviation (SD) of the patients' age, blood pressure, duration of diabetes, body mass index, fasting blood sugar (FBS) and Glucose, and 2-hour post prandial (2HPP) were not statistically significant between the two groups. The frequency of neuropathy severity based on clinical signs during examination and symptoms mentioned by the patients in the two groups was statistically significant ($P = 0.005$ and $P = 0.001$, respectively). The severity of neuropathy was not significantly associated with thyroid-stimulating hormone (TSH) levels ($P > 0.05$). Conclusion: From the results of the present study, it can be concluded that the severity of neuropathy based on the clinical signs during examination and the symptoms mentioned by the patient in diabetic patients is related to subclinical hypothyroidism. Further studies are recommended.

Keywords:

Diabetes, neuropathy, subclinical hypothyroidism

Paper ID: 77

Evaluation of serum zinc levels in diabetic and non-diabetic patients with Covid 19 referred to Kowsar Hospital in Semnan in 2021

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Abstract:

Introduction: Due to the high prevalence and complications of diabetes, especially in patients with Covid 19, and due to the possible association of this disease with micronutrients in the few studies available, the present study aimed to determine the serum level of zinc in Diabetic and non-diabetic patients with Covid 19 were performed. Methods: In this cross-sectional study, 50 patients with Covid 19 diabetic and 50 non-diabetic Covid 19 referred to Kosar Hospital in Semnan in 2021, by available methods were chosen. Serum zinc levels (direct calorimetry test with spectrometry device) and fasting blood glucose (enzyme colorimetric method and glucose oxidase kit) in the two groups were evaluated and the results were compared.

Results: The results showed that serum zinc levels in diabetic patients were significantly lower than non-diabetic patients (86.10 ± 17.85 vs. 93.78 ± 13.56 µg / dl and P = 0.017). 20% of diabetic patients (n = 10) and none of the non-diabetics had low serum zinc levels (less than 65 micrograms per deciliter); There was a statistically significant difference between serum zinc levels in the two groups (P = 0.002). There was a statistically significant and inverse relationship between serum zinc levels in patients with fasting blood sugar levels (R = -0.594 and P < 0.001). Conclusion: Measuring of serum zinc levels is a recommended way for timely diagnosis of high risk patients. It is helpful to prevent from worsening of patients condotions into uncontrolled state.

Keywords:

Diabetes mellitus, Covid 19, serum zinc

Paper ID: 79

Association of Dietary patterns with glycated Hb (HbA1c) levels in type 2 diabetic patients

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Abstract:

Introduction: Dietary modifications remain the mainstay in managing type 2 diabetes mellitus (T2DM). Published data on the effect of overall dietary patterns on T2DM is scarce. The present study aims to extract the dietary patterns and investigate their association with glucose index determined by elevated glycated Hb (HbA1c) levels. Methods: In this cross-sectional study, data from 180 patients with T2DM who referred to the endocrinology clinic of Kowsar Hospital of Semnan (68.9% males) were analyzed.Blood glucose index was estimated with HbA1C. Usual dietary intake was assessed by a validated dish-based semi-quantitative food frequency questionnaire (FFQ). We classified major dietary patterns by explanatory factor analysis (EFA) and Confirmatory Factor Analysis (CFA). Binary logistic regression was used to explore the relationship between dietary patterns and abnormal glucose tolerance.

Results: Three distinct dietary patterns, including unhealthy, healthy, and mixed dietary patterns, were identified. Adult patients who adhere to the unhealthy dietary pattern were more affected with abnormal glucose control index (T1, T2, T3, OR= 1, 1.97, 11.83; 95% CI=ref, 0.72-5.43, 3.11-44.95, respectively) in adjusted model. Patients who adhere to the mixed dietary pattern were also more affected with abnormal HbA1C (T1, T2, T3, OR= 1, 16.11, 24.53; 95% CI=ref, 3.46-75.08, 1.70-353.39, respectively).

Conclusions: Our findings suggest that the unhealthy and mixed dietary patterns are associated with increased prevalence of elevated HbA1c levels among T2DM patients.

Keywords:

Dietary pattern, T2DM, Explanatory Factor Analysis, Confirmatory Factor Analysis

Paper ID: 82

The relationship between the duration of diabetes and dimensions of general health and quality of life associated with the health of diabetic patients

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Abstract:

Introduction: Diabetes is one of the most common chronic diseases in the world. Diabetes has a major impact on the quality of life of patients. The purpose of this study is the relationship between the duration of diabetes and dimensions of general health and quality of life associated with the health of diabetic patients. Materials and methods: In this cross-sectional-analytical study, diabetic patients with more than one-year history who were not suffering from other chronic diseases were included in the study. Then, using 15-question for diabetes quality of life (DQOL) questionnaires and GHQ28 general health were investigated in terms of quality of life and general health. The data were statistically analyzed using SPSS version 24 software.

Results: The average age was equal to 42.8 ± 14.4 years (With a median of 40 years). The average duration of the disease in the patients was equal to 7.7 ± 7.2 years (With a median of 5 years). The average quality of life score of the patients was equal to 50.3 ± 7.8 (Out of 75). There was observed a negative and significant correlation between age and quality of life of patients (P<0.001). The duration of the disease had a direct and significant relationship with the general health score. But, there was not observed a significant difference between the quality of life of married and single people (P=0.613). There was observed a direct and significant relationship between duration of disease, age with physical symptoms (P < 0.001), anxiety and insomnia (P = 0.001), social activity failure (P = 0.013), and depression (P = 0.001) and was also observed with the overall score of general health (P<0.001). Conclusion: The duration of diabetes disease affects the quality of life and general health of diabetic patients, and discomfort, depression and anxiety are the main problems that affect the quality of life of diabetic patients.

Keywords:

Diabetes, Quality of life, General health, Depression

Paper ID: 83

Serum Serotonin Levels: A Comparison between Non-Diabetic and Type 2 Diabetic Patients Referred to Kosar Clinic in Semnan (2021)

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Abstract:

Introduction: Currently, diabetes stands as a prevalent metabolic illness characterized by a multitude of consequences. The involvement of serotonin signaling is believed to be crucial in the impairment of pancreatic β-cells' ability to secrete insulin, as well as in the pathogenesis of type 2 diabetes and its associated problems. The objective of this study is to examine the serum serotonin levels in individuals diagnosed with type 2 diabetes in comparison to those without diabetes, and to explore the potential correlation between serum serotonin levels and blood glucose levels. Materials and Methods: This descriptive cross-sectional study compared type 2 diabetics to non-diabetics. A easy sample approach picked 50 type 2 diabetics and 50 non-diabetics from the Kowsar Semnan clinic. Participant demographics were acquired using a uniform checklist. To measure blood sugar, serum serotonin, and HbA1C, patients completed many tasks and gave blood samples. The data was analyzed in SPSS19. The study compared serotonin levels in diabetics and non-diabetics. The study also assessed serotonin and blood sugar/HbA1C. Statistical methods including t-tests, Pearson's correlation coefficient, and chi-square tests examined these associations.

Results: The diabetic and control groups showed no statistically significant correlation between serum serotonin levels and body mass index, waist circumference, systolic and diastolic blood pressure, hemoglobin A1C, fasting blood sugar, and 2-hour blood sugar. The phenomenon was not seen. In the control group, serotonin serum levels correlated positively with weight and height. Diabetics showed no association. The group with diabetes had significantly higher serum serotonin levels ($P<0.001$) compared to the non-diabetic group. Conclusion: the findings of this study indicate that there is a disparity in the serum serotonin levels between individuals with diabetes and those without diabetes. Specifically, there exists a statistically significant difference in the serum serotonin levels between these two groups, with diabetic individuals exhibiting a significantly higher average serum serotonin level compared to their non-diabetic counterparts. There was no statistically significant correlation found between the levels of serum serotonin and the variables of hemoglobin A1C, fasting blood sugar, and Bs2hpp.

Keywords:

diabetes, serotonin, blood sugar, HbA1c

Paper ID: 86

Maternal uric acid levels and risk of gestational diabetes mellitus: a systematic review and dose-response meta-analysis of cohort studies including 105380 participants

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Abstract:

Aims/

Introduction: Although the association between uric acid levels and adverse pregnancy outcomes (APO) has been investigated, the effects of higher uric acid levels on the risk of gestational diabetes mellitus (GDM) have yet to be established. Therefore, this systematic review and meta-analysis aimed to investigate the relationship between uric acid levels during pregnancy and the risk of GDM. Methods: PubMed/Medline, Scopus, and Web of Science databases were searched up to April 2022 for relevant observational studies. Random-effects model was used to estimate pooled odd ratio (OR) and 95 % confidence intervals (95% CI). To assess heterogeneity of included studies, I2 index was used.

Results: Among the initial 262 studies that were recognized from the databases search, twenty-three studies including 105380 participants were eligible. Pooled analysis indicated that higher uric acid levels significantly affected the risk of GDM (OR: 2.58; 95% CI: 1.89 to 3.52, I^2= 90.8%, p<0.001). Subgroup analyses based on the gestational week demonstrated that higher uric acid levels before the twentieth week of gestation are significantly associated with the risk of GDM (OR: 3.26; 95% CI: 2.26 to 4.71, I^2= 89.3%, p<0.001). Based on the meta-regression analysis, uric acid levels and odds of GDM were significantly correlated with the participants' age, and it was more significant in younger pregnant women. Conclusion: This study revealed a positive association between uric acid levels and the risk of GDM. Also, our results indicate that measuring uric acid levels before 20-week of gestation can potentially predict GDM, especially in younger women. Disclosure: The authors declare no conflict of interest in this work.

Keywords:

Adverse pregnancy outcomes; Gestational diabetes mellitus; Uric acid

Paper ID: 89

Is age at menarche associated with the risk of type2 diabetes and pre-diabetes in reproductive aged women?

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Abstract:
It has been assumed that early menarche is associated with higher risk of type 2 diabetes. We aimed to explore this association among Iranian reproductive age women. For the purpose of the present study, 5191reproductive age participants of the Tehran Lipid and Glucose Study were selected and their diabetes status were assessed. Mean age at menarche was 13.3 (1.5) years. Of 5625 women, 673 and 187 women had pre-diabetes and diabetes, respectively. Early menarche (<11 years) was associated with higher risk of diabetes and pre-diabetes, compared to the reference group (13-14 years), (OR= 3.55, 95%CI: 1.6-7.8 and OR=2.55, 95%CI: 1.4-4.8, respectively), an association which remained after further adjustment for potential confounders. Age at menarche could be considered as a potential risk factor for type 2 diabetes.

Keywords:
Menarche, Type 2 diabetes, Pre-diabetes, Risk factor, Tehran Lipid and Glucose Study (TLGS).

Paper ID: 90

Menarcheal Age and Risk of metabolic syndrome: A Community-Based Cohort Study

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Abstract:
There is controversial data on the impact of age at menarche on cardio-metabolic parameters. This community-based study aimed to assess this association among Iranian women. There are conflicting findings available regarding the influence of menarche age on cardio-metabolic parameters. A community-based study focused on Iranian women was performed to assess this association. Out of 7718 women who participated in the Tehran Lipid and Glucose Study (TLGS), we selected eligible women ages 10 to 50. These women were grouped into several groups according to their menarche age. Thus, under 11 years (early menarche) and over 16 years (late menarche) had the highest menarche age. The prevalence of metabolic syndrome (MetS) and its components was compared in study subgroups. MetS prevalence was 11.9, with a 95% confidence interval of 11.0–13.0. Prevalence values for MetS components were 20.1 for central obesity (95% CI: 19.0-21.3), 15.7 for high FBS, 15.1 for high triglycerides, 53.5 for low HDL (95% CI: 51.9-55.0), and 9.5 for high blood pressure (95% CI: 8.5-10.4). Menarche age 11 years was significantly associated with a higher risk of Mets and its components, including central obesity (OR = 2.5, 95% CI: 1.5-4.2), high blood pressure (OR = 2.9, 95% CI: 1.4-6.0), and FBS (OR = 3.0, 95% CI: 1.4-6.0), after adjusting for covariates. MetS and its components may become more prevalent later in life if menarche occurs early.

Keywords:
Menarche age, Metabolic syndrome, Reproductive age

Paper ID: 92

Adverse pregnancy outcomes and subsequent risk of Diabetes in women: Tehran Lipid and Glucose Study

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Abstract:
Nowadays, complicated pregnancies and diabetes are relatively common health problem with a rising trend among women worldwide. This study aimed to determine the risk of development diabetes in women with history of adverse pregnancy outcomes including gestational diabetes (GDM) and hypertensive disorder of pregnancy (HDP).This population-based cohort study involved 3,650 women who participated in Tehran Lipid and Glucose Study. The standard protocol was used for data collection. The main exposure variables were adverse pregnancy complications including gestational diabetes and GDM and diabetes was the main outcome. Cox proportional hazard regression models were used, adjusting for age, waist-to-height ratio, physical activity, smoking, and parity.In this study about 558 women had histories of adverse pregnancy outcomes. The majority of women (77.66%) did not experience adverse pregnancy outcomes including GDM or HDP, 19.79% experienced one, and 2.55% experienced both risks. Among those who had only GDM or HDP, 56.09% women experienced only GDM, and the other 245 (43.91%) pairs had only a history of HDP .In women with history of experience adverse pregnancy outcomes, the hazard of diabetes increases to 3.05 (95% CI: 1.43, 6.52).Adverse pregnancy outcomes were associated with increased risk of diabetes. Further studies are required to confirm these results. Clinicians should pay attention to the importance of pregnancy complications on later risk of chronic diocese.

Keywords:
gestational diabetes, diabetes, pregnancy,

Paper ID: 93

Children and blood pressure in women: Tehran Lipid and Glucose Study

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Abstract:
Nowadays, high blood pressure is a common non-communicable disease. Evidence supported that reproductive factors have been associated with high blood pressure. This study aimed to determine the association between blood pressure in women with different number of children. This population-based cohort study involved 2,851 women who participated in Tehran Lipid and Glucose Study. The standard protocol was used for data collection. The main exposure variable was number of children and blood pressure was the main outcome. Spline regression models via log link function for the binary outcome and linear link function were applied to evaluate the effect of interaction term age and number of children categories on the outcome. Overall, systolic blood pressure (SBP) differed slightly between groups, among participants of aged 18-30y, the adjusted marginal means (AMM) (CI 95%) ranged from 108.97(102.98, 114.96) mmHg in females with≥3 children to 108.73(101.49, 115.98) mmHg in females with no child. At aged 30-40y, AMM (CI 95%) of SBP ranged from 110.63(100.11, 121.14) mmHg in females with no child to 108.59(106.08, 111.09) mmHg in females with ≥3children. Further, AMM (CI 95%) of SBP among females aged 40-50, 50-60, and 60-70y with no child were 117.80 (109.45, 126.15) mmHg, 125.36 (117.35, 133.36) mmHg, 122.60(109.08, 136.12) mmHg, and 122.60(109.08, 136.12) mmHg, respectively. Among females with≥3 children age groups of 40-50, 50-60, and 60-70 y, AMM (CI 95%) of SBP were 112.10(110.69, 113.51) mmHg, 118.29(117.13, 119.45) mmHg, and 123.90 (121.90, 125.91) mmHg. The regression spline model showed that diastolic blood pressure (DBP) differed slightly between groups. Our findings suggest that childless old females had higher SBP.

Keywords:
parity, children, blood pressure, hypertension

Paper ID: 94

Abortion, stillbirth and Risk of Metabolic Syndrome in women: Tehran Lipid and Glucose Study

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Abstract:
Metabolic syndrome (METs) is the leading health problems around the world. Prior evidence demonstrated that women with a history of pregnancy complications are at increased risk of chronic cardio-metabolic disease. This study aimed to determine the association between abortion/stillbirth and subsequent risk of METs in women. This population-based cohort study involved 2,765 women who participated in Tehran Lipid and Glucose Study. The standard protocol was used for data collection. The main exposure variable was abortion/stillbirth and METs was the main outcome. Poisson regression for binary outcome data with a log link function. The total median (IQR) follow-up time was 15(10-16) years .About two-thirds of participants suffer from METs. The median of number of abortion/stillbirth was 1. A history of abortion/stillbirth increased the risk of METs (RR=1.083; 95%CI: 1.02, 1.14, $p<0.05$) compared to women without history of abortion/stillbirth.

Keywords:
metabolic syndrome, pregnancy, women

Paper ID: 98

Assessing the changes of insulin resistance index in patients with type 2 diabetes treated with ginger as adjunctive therapy

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Abstract:

Introduction In diabetic patients, complementary treatments prescribed in addition to drug treatments. The use of herbals to treat and control diseases is in progress. Ginger is one of the medicinal plants that has been widely used and has no side effects. The antidiabetic effects of ginger on blood sugar levels have been investigated in some studies that had different results. Considering the importance of controlling diabetes in the world, finding a suitable and safe treatment for this disease is an important issue. This study aimed to investigate changes in insulin resistance index diabetic patients who received ginger as a complementary treatment, and compared with patients who only received routine treatment. Methods In this study, 60 patients assigned in two groups (30 patients in the group receiving ginger, and 30 patients as the control group). Data including age, gender, and duration of diabetes, type of medication, and BMI recorded. Patients in the case group received ginger as a supplement, and the control group received only routine treatments. Hemoglobin A1c, FBS and insulin resistance were recorded before the initiation of treatment and one month after treatment. To evaluate insulin resistance, the HOMA standard used based on the US formula. Findings The patients in the two groups matched for gender and there was no statistical difference in terms of body mass index. There was no significant difference in HbA1c between the two groups before and after treatment (P=0.906). There was no significant difference in the amount of FBS of the studied patients in the two groups receiving ginger and the control group before taking the drug and after taking the drug (P=0.059). There was no statistically significant difference between the amount of insulin resistance of the studied patients in the two groups receiving ginger and receiving placebo before taking the drug and after taking the drug (P=0.081). Conclusion Consuming ginger has no effect on glycemic indices, insulin resistance, serum insulin levels, and weight. There are many variables, especially genetics, nutrition and metabolic status, it was not possible to equate them all in one study, and so more studies including more underlying variables recommended.

Keywords:

Iinsulin resistance, Type 2 diabetes,Ginger , Herbal

Paper ID: 99

Reducing postoperative nausea and vomiting after thyroidectomy

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Abstract:
Nausea and vomiting is a common symptom after surgery. Nausea and vomiting after thyroidectomy is a very uncomfortable experience for the patient. Commonly used antiemetic drugs are not always effective. Moreover, some of the newer antiemetic medications are quite expensive. Because of changes in our health care system and the high cost of newer medications, multiple investigators are now seeking alternative methods that are equally effective but less expensive. Phytotherapy is an effective method from complementary and alternative medicine in preventing nausea and vomiting. This study was planned as a randomized controlled trial to reducing postoperative nausea and vomiting after thyroidectomy. The study was carried out with elective thyroidectomy and 81 patients (Ginger group=27, Mint group=27, control group=27) in Turkey-Istanbul city Bezmialem Vakıf University General Surgery Service between February 2021 and August 2022. In the intervention group, the essential oil was administered to the patients as inhalation at the 2nd, , 6th, and 24th hours after the surgery. Pain, nausea-vomiting number and severity, antiemetic use and "Visual Analog Scale", "Rhodes Nausea-Vomiting Index" score at the end of the 24th hour were evaluated in the 2nd, 6th and 24th hours of the groups. It was determined that the number and severity of nausea and vomiting at the 6th hour postoperatively in the intervention group were significantly lower than in the control group ($p<0.05$). It was found that the number and severity of nausea in the intervention group at the 2nd, 6th and 24th hours after surgery, and the number and severity of vomiting at the 2nd and 6th hours after the surgery were more important than the control group. In all three groups, the number and severity of nausea and vomiting were found to be the highest at the 6th hour after surgery. As a result, it was found that Ginger, Mint application was an effective and safe nursing intervention on nausea and vomiting (the number and severity) that developed at the 6th hour after thyroidectomy and reduced the use of antiemetics. With these results, it is recommended to use phytotherapy to prevent nausea and vomiting in the postoperative period.

Keywords:
Thyroidectomy, Postoperative nausea and vomiting, Caring

Paper ID: 100

Associations between GRM7 polymorphisms and obesity

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Abstract:
Obesity could be a around the world issue in which genetic components have a noticeable role. We have chosen a single nucleotide polymorphism (SNP) inside glutamate metabotropic receptor 7 (GRM7) gene, that called rs6782011 to weigh its association with obesity in an Iranian cohort. The distribution of rs6782011 alleles was significantly distinctive in the obese patients from normal controls (P < 0.0001; 434 obese patients vs. 297 normal controls). Distribution of alleles was also measured between sex-based groups of obese patients and controls. We identified momentous contrasts between female obese cases and female control subjects (P < 0.0001; 374 female obese cases vs. 216 female normal controls); all things considered, the distinction in allele distribution was not significant for male cases compared with comparing normal controls (p=0.47; 60 male patients vs. 81 normal males). In this way, GRM7 can be considered as a chance locus for weight.

Keywords:
GRM7, rs6782011, obesity

Paper ID: 103

The impact of adiposity indexes on menopause onset: Tehran Lipid and Glucose Study

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Abstract:
While the relationship between adiposity and age at natural menopause is still unclear, the risk of numerous diseases increases after menopause, which may be caused by changes in anthropometric indexes. To find out whether anthropometric indexes are capable of predicting age at natural menopause, this study was carried out. 3876 women over the age of 20 who took part in the Tehran Lipid and Glucose Study met our eligibility requirements for this purpose. In this longitudinal study, the time ratio with 95% confidence intervals was presented after the Accelerated Failure Time model was used to analyze the relationship between age at natural menopause and various anthropometric indexes. The median survival time was 12.5 (7.9 - 15.8) years, with an interquartile range of 25 to 75. About 40% of the subjects had reached menopause at the end of the follow-up. The body mass index z-score increased by one SD, which increased the median time to natural menopause by about 1% (time ratio: 1.01, 95% CI: 1.00, 1.02). Furthermore, the median time to natural menopause decreased by about 2% (time ratio: 0.98, 95% CI: 0.98, 0.99) by increasing one SD of the lipid accumulation product. The lipid accumulation product and body mass index were the most helpful anthropometric indexes for determining when menopause would onset, while the lipid accumulation product was inversely and body mass index was directly related to the age at natural menopause. Disclosure: Nothing to disclose.

Keywords:
Type of menopause, menopausal age, adiposity index, Tehran Lipid and Glucose Study

Paper ID: 105

Evaluation of natural course of subclinical hypothyroidism 6 months after diagnosis

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Abstract:
There are controversies about treatment of subclinical hypothyroidism due to uncertainties about benefits and disadvantages and also because some persons will have normal thyroid function tests in future. We studied percent of patients who became euthyroid after 6 months without treatment. Also we analyzed if normalization was related to thyroid stimulating hormone (TSH) and anti-thyroid peroxidase (anti-TPO) levels or not. In this cohort study 146 persons older than 18-year-old who had subclinical hypothyroidism that confirmed after 3 months and didn't have indication for treatment were recruited. T4, T3 and TSH levels and anti-TPO were measured at first and T4, T3 and TSH repeated after 6 months. After 6 months, 19.9% of patients had normal thyroid function tests. More persons with negative anti-TPO (30 %) became euthyroid in comparison with anti-TPO positive patients (14.6%) (p value=0.02). There was also significant relationship between TSH at beginning of the study and TSH levels after 6 months (p value= 0.007) Other studies showed higher rate of normal tests in follow up but they were longer than ours or different range of age were studied. For example Park study in Korea 47.3 % of persons with subclinical hypothyroidism had normal thyroid function tests after follow up and like to our study this was related to anti-TPO.

Keywords:
subclinical hypothyroidism, course, anti-TPO

Paper ID: 109

Neonatal and long term outcomes of Children of Mothers with GDM

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Abstract:
Gestational Diabetes (GDM) with a prevalance rate of 7.5 persent is 5 times more common in Pregnancies than pregestational Type 1 and Type 2 diabetes. GDM the same as pregestational diabetes, can be associated not only with fatal, but also with neonatal and childhood complications. It can increase the risk of different types of congenital anomalies and also can increase mortality and morbidity rate in comparison with those borned from none diabetic mothers. Prematurity, Macrosomia, Respiratory distress Syndrome, hypoglycaemia and Hypocalcemia hyperviscosity, polycythemia and hyperbilirobinemia are some complications that are more Common in Infants of mother with GDM. According to Long-term data, we know that maternal hyperglycemia may influence the risk of some metabolic complications later in life for the children when they become adult. Offspring of mothers with diabetes have an increased risk of obesity and abnormal glucose metabolism. Hyperglycemia in fetal period can induce hyperinsulinemia witch may affect maldevelopment of adipose tissue and pancreatic beta cells. This pathogenic mechanism is depends on the severity and duration of intrauterine hyperglycemia and may be in pregestational or gestational maternal diabetes. Gestationd or pregestational Maternal diabetes can also Impacts neurodevelopmental and psychiatrist outcome of the offspring later in life. It may be depend on how to controle diabetics in pregnancy. However, data in this area is very limited and evidences have poor quality.

Keywords:
gestational diabetes, neonate, children, complication

Paper ID: 110

Sex-specific associations of serum alkaline phosphatase with metabolic syndrome and its components: More than a decade of follow-up

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Abstract:
The relationship between serum alkaline phosphatase (ALP) and incident metabolic syndrome (MetS) has not been well studied. The purpose of this research was to investigate the association between ALP and incident MetS and its components, as well as the influence of sex modification on this relationship in Iranian adults. The multivariable Cox proportional hazards regression models were used to examine the relationships between ALP as both continuous and categorical variables and incidence of MetS and each of its components. Taking each MetS component as the outcome, further adjustments for other MetS components were also made. For incident MetS, there was a significant interaction between ALP quartiles and sex (P=0.006). During a median follow-up of 15.6 years, 597 MetS cases (336 women) occurred among 831 patients (467 women) with a mean age of 44.51(12.98) years. Increasing levels of ALP throughout the second to fourth quartiles in women were related with hazard ratios (HRs) for MetS of 1.269, 1.491, and 2.092, respectively (P for trend <0.001). Furthermore, a 1-SD rise in ALP was linked with a greater risk of incident MetS with an HR of 1.195 (95% confidence range, 1.094-1.305). There was no significant association detected between increased ALP levels and MetS in males. The overall population result was consistent with the results among women. Taking incident high triglycerides (TG) as the outcome, increasing ALP values across the second to fourth quartiles were significantly associated with HRs of 1.793, 1.255, and 1.815 for incident TG and 1.135, 1.839, and 1.529, respectively, for low high-density lipoprotein cholesterol (HDL-C), (all P for trends 0.001). Increasing ALP levels were related with a larger waist circumference (WC) in males (P for trends 0.008). Increasing ALP levels were linked with high WC and low HDL-C levels in the general population (P for trends 0.05). Sex was a major modulator in the influence of ALP on the incidence of MetS and its components, and ALP were a strong predictor of MetS and its dyslipidemia components in women. However, increased ALP levels in males were related with incident central adiposity but not MetS.

Keywords:
Alkaline phosphatase, metabolic syndrome, dyslipidemia, high blood pressure, hyperglycemia, abdominal obesity

Paper ID: 112

Age at menarche and its relationship with obesity/overweight among adolescents

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Abstract:
The mean age at menarche is affected with various factors. Prior Evidence highlighted that menarche age has been linked to several adverse health outcomes later in life. The aim of the study is to investigate the association of overweight/obesity and menarcheal age. This cross-sectional study involved 824 healthy adolescent girls aged 11-19 years old who lived in Tehran. The diagnostic criteria of the Centres for Disease Control and Prevention (CDC, 2000) was applied for definition of overweight and obesity. Participants categorized into three groups (underweight, normal, obese/overweight). The mean age at menarche was 12.85±1.14 years. The prevalence of obesity/overweight was 14.2%. The mean of age at menarche of girls who were underweight, normal, and overweigh/obese were 13.21±1.04 years, 12.82±1.12 years, and 12.85±1.14 years respectively. There was significant difference regarding mean of age at menarche in different categorizes of body mass index (F=17.45, p = 0.02).

Keywords:
obesity,adolescents,menarche

Paper ID: 116

Effect of the Silybum marianum Seed Extract on Serum Glucagon-like peptide-1 (GLP-1) in Alloxan-Induced Diabetic Rats

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Abstract:
Recently, it is considered the role of hypoglycemic agents especially medicinal plants derivatives in treatment of diabetes mellitus. Silybum marianum seed contains alkaloids, flavonoids, saponin, tannin, phenolic compounds that known as Silymarin. An important source for silymarin is the seeds from plant with antioxidant properties that decreases the complications of the disease. The aim of study was to investigate the effects of hydroalcoholic extract of S.marianum seed on the serum levels of glucose, GLP-1, insulin. A total of 40 rats (initial weight of 213 ±12 g) were divided into five groups. One months after treatment with S.marianum seed extract, the rats were sacrificed and blood glucose, GLP-1t serum insulin were measured. The results showed that the extract of S.marianum at doses of 100, 200 and 400 mg/kg increased the serum level of insulin ($p<0.05$), GLP-1 ($p<0.05$). The data demonstrated S.marianum seed hydroalcoholic extract had an effect on GLP-1 and insulin secretion and this extract can be effective for improvement of diabetic complications.

Keywords:
GLP-1, Silybum marianum, Diabetes

Paper ID: 117

Investigating the effect of 8 weeks of moderate resistance training (MRT) and a Lactobacillus roteri probiotic supplement on the serum concentration of liver enzymes and weight changes in male Wistar rats with non-alcoholic fatty liver disease(NAFLD)

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Abstract:
Introduction: The rapid increase in the prevalence of obesity and lack of physical activity in the world and its associated metabolic complications, such as non-alcoholic fatty liver disease(NAFLD), have become a threat to human health. Lifestyle modification, including appropriate physical activity, a healthy diet, and weight loss, has been introduced as the most effective treatment method for NAFLD. Probiotics seem to reduce inflammation and oxidative stress, which is effective in preventing and treating liver cell damage. Therefore, for this purpose, the purpose of this study is to investigate the effect of 8 weeks of moderate resistance training(MRT) and a Lactobacillus roteri probiotic supplement on the serum concentration of liver enzymes and weight changes in male Wistar rats with non-alcoholic fatty liver disease. Methods:The present study was conducted on 32 male rats. which were randomly divided into 4 groups of 8. The groups were the control group (suffering from fatty liver and receiving enough water and food) (supplement group) (suffering from fatty liver and receiving probiotic supplements) (exercise group) suffering from fatty liver and doing resistance training on a daily basis (supplementing group) + Exercise (suffering from fatty liver and receiving supplements and performing resistance training on a daily). Resistance training was done in the form of climbing a ladder for two sets of four repetitions and three days a week (even days) for 8 weeks. All animals were weighed at the beginning and weekly using a digital scale. Serum levels of liver enzymes were checked at the beginning, middle, and end of the study. Spss version 25 software was used for data analysis.
Results: The findings of this research showed that the weight of mice in the exercise group, the supplement group, and the supplement + exercise interactive group had a significant decrease compared to the control group, and the amount of this decrease was greater in the supplement group. Also, MRT and receiving a Rotari probiotic supplement have been effective in reducing serum ALT levels in the studied groups. Conclusion:Exercises improve body composition and reduce body fat percentage; Roteri probiotic has been able to improve liver function by improving intestinal-liver function and improving the function of bile acids.
Keywords:
moderate resistance training (MRT), probiotic supplement, Lactobacillus roteri, liver enzymes, non-alcoholic fatty liver disease(NAFLD)

Paper ID: 118

Investigation the effect of 8 weeks of aerobic training and borage extract on the serum concentration of liver enzymes and lipid profile in rats with non-alcoholic fatty liver disease (NAFLD)

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Abstract:

Objective: Non-alcoholic fatty liver disease (NAFLD) is known as one of the chronic liver diseases that is closely related to obesity and metabolic disorders. Borage improves oxidative indices due to its antioxidant properties, and physical activity improves liver function. So, the aim of this study is to investigate the effect of aerobic exercise with borage extract on the serum concentration of liver enzymes and lipid profile in rats with non-alcoholic fatty liver disease. Methods: In this experimental study, 40 male Wistar rats weighing 250–300 grams were divided into 4 groups (N = 10). The groups were: Control group (suffering from fatty liver and receiving enough water and food/without exercise and supplements) Complementary group (suffering from fatty liver and receiving 200 mg/kg of borage extract) Exercise group (suffering from fatty liver and doing aerobic exercise daily for 8 weeks) Exercise supplement group (suffering from fatty liver and receiving 200 mg/kg borage supplement and performing aerobic exercise for 8 weeks) At the end, blood was drawn from all the animals, and the serum lipid profile, including total cholesterol and triglycerides, as well as liver enzymes such as alanine aminotransferase (ALT) and aspartate aminotransferase (AST), were measured by the ELISA method. Spss version 25 software was used for data analysis with a significance level of <0.05.

Results: The results of covariance analysis in this study showed that for all variables there is a significant difference between the pre-test and post-test averages of the groups; only in the case of TG and AST can it be said that the average is not different because its significance level is more than 5%. It means that gol-gau language and aerobic exercise could not change the average of TG and AST. Conclusion: Eight weeks of aerobic training and taking cow's tongue flower extract can only have an effect on reducing serum cholesterol and AST levels, so we need more studies and more detailed tests in this regard.

Keywords:

non-alcoholic fatty liver(NAFLD), aerobic exercise, borage extract, alanine aminotransferase(ALT), aspartate aminotransferase(AST)

Paper ID: 120

Exploring the Metabolic Landscape of Malignant Thyroid Nodules: A Comprehensive Systematic Review with a Brief Meta-Analysis

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Abstract:

Thyroid cancer, despite being the most prevalent type of endocrine cancer, has not been extensively studied in the field of metabolomics using nuclear magnetic resonance (NMR) techniques. The objective of this research was to conduct a comprehensive review and statistical analysis of existing NMR-based metabolomics studies that investigate specific changes in metabolites. The focus was on differentiating between malignant thyroid nodules and benign nodules, as well as distinguishing between malignant thyroid nodules and normal tissue. This study conducted a thorough search across three databases - PubMed, Scopus, and Embase - to gather publications in different languages. Initially, a total of 353 articles were found. However, after applying the inclusion criteria for the systematic review, only 12 studies fulfilled the requirements for inclusion. Among these 12 studies, 5 reports from 3 articles were deemed suitable for meta-analysis. In total, 49 compounds were identified, with 40 of them being metabolites. The metabolites that were found to be higher in thyroid lesions (malignant or benign nodules) compared to normal tissue included lactate, taurine, alanine, glutamic acid, glutamine, leucine, lysine, phenylalanine, serine, tyrosine, valine, choline, glycine, and isoleucine. On the other hand, lipids, as a broad category, were observed to be lower in thyroid lesions. Specifically, lactate and alanine were found to increase in malignant thyroid nodules compared to benign ones, while myo-inositol, scyllo-inositol, citrate, choline, and phosphocholine showed decreases. Through a meta-analysis using correlation coefficients from orthogonal partial least squares discriminant analysis, three metabolites were found to be significantly different between malignant and benign nodules: lactate, alanine, and citrate. In summary, this research offers a brief overview of 12 metabolomic studies that have been included, making it easier for future researchers to compare their results with previous studies. It seems that the field of thyroid cancer metabolomics is on the verge of making significant progress, which may ultimately lead to the identification of trustworthy biomarkers for diagnosis and treatment.

Keywords:

Thyroid carcinoma, Metabolites, Diagnostic biomarkers, Metabolomics, Thyroid nodules

Paper ID: 121

The relationship between serum irisin levels and renal function in patients with type 2 diabetes

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Abstract:

Background/aims: Diabetic nephropathy is a leading cause of chronic kidney failure and end-stage renal disease (ESRD). The early detection of diabetic nephropathy provides a valuable opportunity for timely interventions to prevent further adverse outcomes. Previous studies have demonstrated the involvement of irisin in different aspects of metabolic hemostasis. However, conflicting findings have emerged regarding the serum levels of irisin in type 2 diabetes mellitus (T2DM). Therefore, the aim of this study was to evaluate the relationship between serum irisin levels and renal function in patients with T2DM. Methods: A total of 140 patients with T2DM were enrolled in this cross-sectional study. Demographic, anthropometric, and clinical data were collected. Fasting blood samples were taken, and serum irisin levels were measured using an ELISA method. Additionally, serum levels of fasting blood sugar, creatinine, HDL, LDL, TG, and HBA1C, as well as urinary albumin, were measured using routine methods. The correlations of irisin levels with anthropometric and biochemistry variables were determined. Furthermore, the patients were divided into two groups based on their GFR and ACR, and the association between irisin levels and renal function was analyzed.

Results: No significant difference was observed in serum irisin concentrations between the reduced renal function group (GFR≤60) and those with GFR>60 (10.45±6.54 vs 13.32±10.59 ng/ml, respectively), (P=0.08). In stratified analysis by ACR, diabetic patients with nephropathy also showed a non-significant lower irisin level than those without (11.70±8.18 mg/dl vs 13.38±11.51, P=0.33). Furthermore, serum irisin level showed no significant correlation with FBS (P=0.05), insulin (P=0.06), albuminuria (P=0.55), creatinine (P=0.21), LDL (P=0.96), HDL (P=0.61) and BMI (P=0.42).

Conclusions: Lower levels of irisin in diabetic patients with reduced renal function/nephropathy suggest a potential involvement of circulating irisin in the pathogenesis of diabetic nephropathy and the development of renal dysfunction. Further research is warranted to better understand the role of irisin in these conditions and its potential implications for therapeutic interventions.

Keywords:

Diabetes, Irisin, nephropathy, renal function, GFR, ACR.

Paper ID: 132

An Overview of the Diagnosis, Treatment, and Follow-up of Acromegaly: A consensus review

Halimeh Amirazad[1] • Mostafa Najafipour[2] • Nazila Vosoghi[3] • Farzad Najafipour[1*] • Naimeh Mesrialamdari[1] • Samira Pourmoradian[4]

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Abstract:
Abstract Acromegaly is a rare and heterogeneous disorder, often caused by a growth hormone-secreting pituitary adenoma. Despite the availability of three treatment modalities (surgery, medical treatment, and radiotherapy), and the approval of new drugs in recent decades, some patients continue to experience active disease despite undergoing treatment. Hence, there is a demand for innovative therapies in the management of acromegaly, which involves the exploration of new formulations for existing drugs and the development of entirely new drugs currently undergoing research. The purpose of this article is to provide an up-to-date review on the diagnosis, treatment, follow-up and genetic screening of acromegaly. The utilization of modern technology in transsphenoidal microsurgery has resulted in modest improvements in outcomes while expanding the range of treatable conditions and enhancing patient safety during procedures. Advancements in drug formulations have substantially enhanced the effectiveness of treatment for acromegaly, particularly with the development of extended-release formulations and novel drugs. The ongoing progress in somatostatin receptor ligands (SRLs) is expanding treatment options, offering promising avenues for potential new therapies in future clinical practice. Furthermore, identifying genetic mutations enables the targeted screening for associated health issues and establishes the condition within family members prior to the onset of clinical symptoms.

Keywords:
Acromegaly, Pituitary Surgery, Radiotherapy, Somatostatin Analogues

Paper ID: 134

Effects of levothyroxine replacement therapy on insulin resistance in patients with untreated primary hypothyroidism

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Abstract:
This study investigated the effects of levothyroxine replacement therapy on insulin resistance, lipid profile, and thyroid function in patients with untreated primary hypothyroidism. 105 patients with hypothyroidism with indication for levothyroxine replacement were enrolled in the present study. Insulin, fasting blood glucose and lipid profile were assessed at the beginning of diagnosis and three months after levothyroxine replacement. Insulin resistance was calculated by hemostasis model assessment of insulin resistance (HOMA-IR) and quantitative insulin sensitivity check index (QUICKI). Our data revealed a significant reduction in body mass index (27.18 ± 4.27 versus 26.81 ± 4.18 kg/m2, $p = 0.028$), cholesterol (199.79 ± 37.61 versus 178.10 ± 32.25 mg/dl, $p < 0.001$), triglyceride (160.41 ± 71.86 versus 146 ± 61.11 mg/dl, $p = 0.012$), low density lipoprotein-cholesterol (123.54 ± 30.7 versus 107.08 ± 26.98 mg/dl, $p < 0.001$), fasting insulin (8.91 ± 3.92 versus 8.05 ± 2.65 mIU/l, $p < 0.001$), and thyroid stimulating hormone (47.47 ± 3.4 versus 2.22 ± 1.84 µIU/ml, $p < 0.001$) levels before and after drug intervention. However, no statistical differences were observed in HOMA-IR, QUICKI, and high density lipoprotein-cholesterol. In conclusion, in patients with untreated primary hypothyroidism, levothyroxine replacement therapy based on HOMA-IR and QUICKI did not improve insulin resistance; however, lipid profile was significantly improved following levothyroxine administration. This study was registered in the Iranian Registry of Clinical Trials (IRCT) with ID number: IRCT20130610013612N10 on the date 2019-09-02.

Keywords:
Levothyroxine, insulin resistance, thyroid, glucose

Paper ID: 136

Gender differences and its related factors in patients with diabetic foot ulcers

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Abstract:

Introduction: Diabetes is the most common endocrine disease and one of the most important health-medical and socioeconomic problems in the world and diabetic foot ulcer is one of the most serious chronic complications of this disease. Also, considering the differences between the two sexes in diabetes patients, in order to improve justice in the health of diabetic men and women, we must be aware of the biological reasons for these differences and to control the risk factors of diabetic foot ulcer, which is one of the debilitating complications and costs of this disease, in both sexes equally. Therefore, we decided to conduct a study with the aim of determining gender differences and related factors in diabetic foot ulcer patients and with more awareness, let's take steps to prevent leg ulcers and the resulting debilitating complications. Methods: The study was a cross-sectional trial. The variables investigated were sociodemographic data, clinical history of diabetes mellitus and complaints about the feet. A glucometer was used to determine fasting blood sugar and random blood sugar, and a patient file was used to determine cholesterol, HLD, LDL, and triglyceride. The plantar sensitivity was evaluated on both feet, with the use of monofilaments. For data analysis we used chi-square test and binary logistic regression ($p < 0.05$; 95% CI).

Results: The results indicated that most of participants were female (63.1%) and between them most location of foot ulcer was in Metatarsus (50%). And among men, was under the big toes (43%)presence of sensory comorbidities ($p<0.001$; OR 3.06). Inactivity (31.09%), lack of blood sugar control in women (HbA1C= 9.8 ± 0.83), lack of on timely follow-up (41%), obesity (48.1%)and poor medication compliance in men are the most reported factors. It should be noted that both genders reported mood disorders as the effective factors. Conclusion: The factors associated with the development of diabetic foot were presented differently in women and men, so a targeted and more specific preventive approach is required. Due to the frequency of regeneration of foot ulcer, it is suggested to provide a written program for both men and women.

Keywords:

Diabetic foot ulcers, Diabetes, Gender differences

Paper ID: 138

The effect of self-care education on HbA1C in adolescents with type 1 diabetes

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Abstract:
Diabetes is a chronic disease thus patients need using self-care behaviours through life span for prevention of diabetes problems and complication. Accordingly, children with diabetes type 1 first need to self-care education as well as their family to prevent them from diabetes problems and complication. This study aimed to determine the impact of self-care education on HbA1C in adolescents with type 1 diabetes. This study was conducted on seventy-four adolescents 12-18 years old with type 1 diabetes registered to the Iran Diabetes association that allocated into two intervention and control groups using convenience sampling method. Educational program was performed in intervention group during five weeks via a valid training package and under faulty member supervision. After the education program patient follow up during three months by a mobile virtual services. HbA1C was measured before the intervention and 3 months after the intervention. Data were collected analysed by the SPSS 18 software. The results showed a significant difference in level of HbA1C in intervention group. Thus Self-care education and follows up can lead reduction of HbA1C among Adolescents with type 1 diabetes.

Keywords:
Type 1 diabetes, Self-care, HbA1C, Adolescents

Paper ID: 141

Prevalence of COVID-19 in diabetic patients in Mazandaran province

Parastoo Karimi Aliabadi[1] • Zahra Kashi[1] • Elham Yousefi Abdolmaleki[1] • Adele Bahar[1] • Marzieh Movahedi Rad[1] • Siavash Moradi[2] • Mehrnoush Sohrab[1*]

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Abstract:
Clinical evidence shows that patients with T2DM are at higher risk for severe form of Coronavirus disease 2019 (COVID-19). Several risk factors have been identified as having a greater chance of acquiring a more severe form of the illness and, as a result, of having a higher fatality rate. Chronic respiratory diseases, cardiovascular disorders, hypertension, metabolic syndrome (MS), and diabetes mellitus (DM), in particular seem to have a significant effect in the development of a more severe form of the disease with several consequences. The aim of this study was to determine the frequency of covid-19 in type 2 diabetic patients by different diabetes comorbidities. Our study was a cross-sectional survey of the patients with T2DM who referred to endocrine clinics of Mazandaran University of Medical Science. The medical status of 841 patients with or without COVID-19 between April and June 2020 was analyzed. There were significant differences in prevalence of cardiovascular disease, age, FBS, BS2hpp, duration of diabetes and previous influenza vaccination between patients with or without COVID-19 ($P<0.05$). The prevalence of hypertension, pulmonary diseases, chronic kidney disease, retinopathy and nephropathy were not significantly differed in T2DM patients with or without COVID-19. On the other hand, based on the data of this study, it seems that influenza vaccination has been useful in preventing covid in diabetics. Disclosure: Nothing to disclose. The authors will bear full responsibility for the accuracy of their English abstracts

Keywords:
diabetes mellitus, Covid-19, influenza vaccine, comorbidities, retinopathy, nephropathy

Paper ID: 142

Relationship between Vitamin D and Psoriasis

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Abstract:
Psoriasis is a chronic inflammatory disease with immune involvement and increasing of keratinocytes in skin that manifest as dermatitis. Meanwhile, psoriasis is a systemic disease that affected other organs and can increase risk of metabolic disorders and chronic disease. Although, the etiology of psoriasis is not fully revealed but several factors such as genetic, auto-immunity and spiritual condition can affect presentation and development of disease. Because vitamin D other than diet, is synthesized in the skin so it is proposed that this vitamin can affect cutaneous immune system. With regard to reports of many studies, vitamin D could have anti-proliferative and anti-inflammatory effects on skin diseases such as psoriasis. In many studies it is surveyed effects of topical therapy of vitamin D as adjunctive treatment in psoriasis and in a few of them performed in related to oral supplementation of this vitamin. Thus, it is necessary to represent effectiveness of vitamin D supplementation (as topical or oral) and reveal involvement mechanisms of this vitamin on psoriasis as a inflammatory skin disease

Keywords:
Auto-immunity, Inflammatory disease, Keratinocytes, Psoriasis, Vitamin D

Paper ID: 143

A SURVEY OF RELATIONSHIP BETWEEN DIETARY QUALITY AND METABOLIC SYNDROME

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Abstract:

Background: Dietary intake might have significant role in metabolic syndrome. Many studies revealed there is relationship between dietary quality indices and incidence of metabolic syndrome in many community. Objective: The aim of this study was the evaluation of effects of dietary quality indices on metabolic syndrome in beside of demographic factors. Materials and Method: This case-control study was performed on 175 metabolic syndrome patients and 175 healthy subjects (male and female)with age range 20-65 years old who were collected from several laboratories and general recalling in Chalus, northern Iran. Information of dietary intake is collected by food frequency questionnaire (FFQ) and dietary quality indices include healthy eating index (HEI), dietary diversity score (DDS), nutrient adequacy ratio (NAR) and mean adequacy ratio (MAR) were assessed based on standards methods.

Results: There was not difference in chance of morbidity for metabolic syndrome in regard to HEI,NAR and MAR in quartile 4 (maximum score) versus quartile 1 (minimum score) but after adjustment for confounder variables (age, sex, dietary energy, education, job and marriage status) this chance decreased. For DDS, there is difference in chance of morbidity in quartile 4 versus 1 but after adjustment for confounder variables this difference was not significant .There was no significant difference ($P \geq 0.05$) in procedure of odds ratio in quartiles and models (P trend) in all of dietary quality indices. Conclusion :There was no significant connection between dietary quality indices and incidence of metabolic syndrome .

Keywords:

Metabolic syndrome, Healthy eating index, Dietary diversity score, Nutrient adequacy Ratio, Mean adequacy ratio

Paper ID: 144

Investigating the effect of benign neutropenia in Arabian residents of Mashhad on obesity: The role of MPO in this process

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Abstract:
Benign neutropenia is a disease that has the ability to become an inflammatory condition. Clinically, it is defined as a neutrophil count of less than 2000/Ml . In obesity, neutrophils with an active phenotype produce myeloperoxidase (MPO). This enzyme increases the adipogenesis pathway by activating inflammation. In this study, the prevalence of benign neutropenia was investigated in Arab residents of Mashhad. A total of 70 healthy Arab residents (male/female) from Mashhad city in Iran were studied. A blood sample was taken and analyzed for the presence of ethnically benign neutropenia. The results of this study showed that the prevalence of ethnically benign neutropenia was 9.28% (9/70) in Arab residents. Therefore, in people suffering from benign neutropenia and obesity at the same time, Defective cycle caused by MPO, facilitates the process of obesity. Totally 70 Arabian healthy residents (male/female) from Mashhad city in Iran were studied. they were asked for their familial background of these diseases. The data were expressed as the Mean±SE (Standard Error Mean). Student t-test was used for analysis. Statistical analysis was done using Prism version 6.07 software. P-values less than 0.05 were considered significant. Results showed that prevalence of benign ethnic neutropenia in Arabian residents was 9.28% (70/9). Differential hematologic aspect of each group was determined. There is a significant decrease in number of neutrophils and also in their differential count in patients than health peoples. According to past studies the increasing amount of MPO in patients suffering from neutropenia should be considered. The co-occurrence of obesity and neutropenia is an important issue in future studies. Because of the MPO communication link between these two pathological conditions.

Keywords:
MPO, neutropenia, obesity, inflammation

Paper ID: 146

The Relationship Between Atherogenic Index of Plasma and Cognitive Impairment in the Elderly Iranian Population: Findings from the Bushehr Elderly Health Program.

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Abstract:

Introduction Cognitive decline is a major challenge to global public health, especially among older adults. High Atherogenic Index of Plasma (AIP) is linked to cerebral small vessel disease, which may increase the risk of cognitive decline. This study aims to provide insights into the complex relationship between AIP and cognitive function, which could inform the development of better interventions and treatments for cognitive decline. Methods The study enrolled 2373 individuals (51.5% women) aged more than 60 years participating in the second phase of Bushehr Elderly Health Program. Cognitive impairment was defined through the combination of any of the three methods of Mini-Mental State Examination, Categorical verbal fluency tests, and Mini-Cog. The AIP was obtained by Log (molar serum triglyceride/HDL). The connection between AIP and cognitive function was evaluated. Since statin use is an essential factor affecting the lipid profile, the analysis was stratified according to statin use and adjusted for possible confounders as well. Results 1423 (60%) were determined to have cognitive impairment according to either assessment method. Overall, those with impaired cognition differed significantly from others regarding age, sex (higher in women), marital status, antihyperlipidemic medication (either fibrates or statins), diabetes, depression, low physical activity, and some lipid parameters (Cholesterol, LDL, non-HDL).

After stratification, we observed that in statin users, high-risk AIP category (AIP>0.21) was significantly associated with cognitive impairment [OR: 1.38 (1.02-1.87)] and remained significant after adjustment for confounders [1.48 (1.07-2.05)]. Other significant contributing factors include age (OR: 1.08; 1.07) and female sex (OR: 2.8; 2.1) in both non-statin and statin users; smoking (OR: 1.2), low physical activity (OR: 1.4), depression (OR: 1.6), and diabetes (OR: 1.7) in non-statin group; and lower education levels (OR: 1.5) in statin users. Conclusion The current study, along with previous research, suggests that high AIP values may be linked to an increased risk of cognitive impairment and the development of neurodegenerative conditions. Specifically, there is evidence that high AIP is associated with cerebral small vessel disease. These findings underscore the importance of examining lipid profiles as a potential risk factor for cognitive decline and the need for additional research in this area.

Keywords:
Atherogenic Index of Plasma, Cognitive Impairment, Elderly, Dementia, Lipid

Paper ID: 147

The role of magnesium sulfate in liver insulin resistance in type 2 diabetic parents under high-fat diet and their offspring

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Abstract:
Insulin resistance (IR) is a glucose metabolic condition in which the tissue's sensitivity to insulin declines. Insulin's primary target tissue is the liver, which plays a critical role in glucose metabolism. IR is present in the offspring of moms who have type 2 diabetes. The impact of magnesium sulfate in reducing hepatic IR in type 2 diabetes parents and their offspring's liver was studied in this research.Rats were separated into four groups: non-diabetic control (NDC), diabetic control (DC), magnesium-treated diabetic (Mg), and insulin-treated diabetic (Insulin). The trial lasted six months, including four months of follow-up for the offspring. Finally, all animals were subjected to a hyperinsulinemic-euglycemic clamp test. In all groups, the insulin tolerance test (ITT) was performed, as well as serum and liver lipid profiles. Glycogen levels in the liver, as well as the expression of the Foxo1, Irs2, Akt2, and Pepck genes, were evaluated in all groups. The pathophysiology of fatty liver was also investigated in the liver. In comparison to the DC group, magnesium enhanced ITT, raised liver glycogen levels, and lowered lipid profile, blood glucose levels, and HbA1c in parents and offspring. Magnesium enhanced the rate of glucose infusion in both parents and offspring. In addition, as compared to the DC group, the expression of Foxo1, Irs2, Akt2, and Pepck genes, as well as fatty liver, were improved in magnesium-treated parents and their offspring. Magnesium administration reduced liver IR in both parents and offspring by affecting the insulin signaling and gluconeogenesis pathways in the liver.

Keywords:
insulin resistance, type 2 diabetes, liver, magnesium

Paper ID: 149

postural balance in children and adolescent with and without obesity

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Abstract:

Introduction: Pediatric obesity is one of the most serious public health challenges in the 21st century1. Postural balance is the ability to maintain and restoration of body balance in different positions and activities. Postural balance is required for performing activities of daily living2, 3 and participating in physical activities plays an important role in the management of obesity4. Obesity in children and adolescents may impair postural balance5. Impaired postural balance can lead to limited physical activity, increased body weight, and increased risk of falling6. Previous studies reported conflicting results about the effect of body weight on postural balance in children and adolescents with obesity7, 8. The aim of this study was to compare postural balance in children and adolescents with and without obesity. Material and Methods: The study was a case-control study approved by the ethical committee of Isfahan University of Medical Sciences (IR.MUI.REC.1400.061). 90 children and adolescents with and without obesity, aged 6-11 years old, (N=45 in each group) were recruited. Balance Error Scoring System and Modified Star Excursion Test were used to evaluate static and dynamic postural balance, respectively.

Results: Results indicated that there was no significant difference between the two groups regarding static postural balance, but the dynamic postural balance was significantly better in the normal weighted group. Conclusion: Based on the results of the current study it can be concluded that the assessment of postural balance is important to be considered in the physical assessment of children and adolescents with obesity. Since postural balance is essential for participating in physical activity and physical activity is necessary for weight control, improving postural balance can be helpful for weight management of obesity in addition to diet.

Keywords:
obesity, overweight, postural balance, children, adolescent

Paper ID: 150

Comparison of muscle force of lower extremity in children and adolescent with and without obesity

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Abstract:

Introduction: Obesity is a major public health concern. Since prevalence of obesity is increasing, exploring the impacts of early obesity on the developing musculoskeletal system is important. There is controversy about the impact of obesity on muscle force. The aim of present study was comparison of muscle force of lower extremity in children and adolescent with and without obesity1,2. Material and Methods: The present study was case-control study conducted on 90 children and adolescents with and without obesity, aged 6-11 years old, (N=45 in each group). Muscle force of lower extremity was measured by digital dynamometer (digital force gauge, SF-500).

Results: Findings demonstrated that there was significant difference between the two groups regarding muscle force of lower extremity. Conclusion: Children with obesity require musculoskeletal assessment as a part of their general assessment. Musculoskeletal disorders can influence time spent in physical activity. Since increasing physical activity is major components of obesity management, it is recommended that physiotherapists can assess and manage musculoskeletal disorders in obese subjects 3. Key words: obesity, overweight, muscle, force, children, adolescent References: 1-Alhusaini A, Melam G, Buragadda S. The role of body mass index on dynamic balance and muscle strength in Saudi schoolchildren. Science & Sports. 2020;35(6):395. e1-. e9. 2-Mohan V, Rahman NFHA, Md Yunus N, Abd Razak NS, Selvarajan KK, Das S. Alteration in peripheral muscle strength among overweight and obese individuals: A systematic review. Journal of Krishna Institute of Medical Sciences University. 2017;6(2):19-32 3- O'Malley G, Hussey J, Roche E. A pilot study to profile the lower limb musculoskeletal health in children with obesity. Pediatric Physical Therapy. 2012;24(3):292-8.

Keywords:
obesity, overweight, muscle, force, children, adolescent

Paper ID: 151

Correlation between postural balance and body composition in children and adolescent

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Abstract:

Introduction: Among non-communicable diseases obesity is stated as major concern1. The results of previous studies conducted on adults have indicated that in addition to body weight, body composition can predict postural balance2. The aim of current study was to determine Correlation between postural balance and body composition in children and adolescent with and without obesity. Material and Methods: 90 children and adolescents with and without obesity participated in study. postural balance was evaluated by Balance Error Scoring System and Modified Star Excursion Test. body composition was assessed by In Body device (InBody 270, InBody co, Seoul, Korea). Pearson correlation coefficient was measured between body composition and postural balance.

Results: Results indicated that there was not significant correlation between dynamic postural balance and body composition but there was significant correlation between static postural balance and fat free mass. Conclusion: Based on Results it can be recommended that in management of obesity it is better to focus on increasing fat free mass in therapeutic exercise. Increased fat free mass can lead to more participation in physical activity and weight loss. Key words: obesity, overweight, body composition, children, adolescent References: 1- Organization WH. Report of the commission on ending childhood obesity: World Health Organization; 2016. 2- Villarrasa-Sapiña I, Álvarez-Pitti J, Cabeza-Ruiz R, Redón P, Lurbe E, García-Massó X. Relationship between body composition and postural control in prepubertal overweight/obese children: A cross-sectional study. Clinical Biomechanics. 2018;52:1-6

Keywords:
obesity, overweight, body composition, children, adolescent

Paper ID: 152

Prevalence of COVID-19 in hypothyroid patients in Mazandaran province

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Abstract:
The Covid -19 virus has spread as a pandemic since the beginning of 2020 and has brought many risks and concerns. There is conflicting evidence about hypothyroidism or thyroid disorders in people with covid infection. The aim of the current study was to determine the frequency of Covid infection in hypothyroid patients. The present descriptive-analytical cross-sectional study was conducted on 1406 (82.7% were women) cases of hypothyroid patients who visited specialized clinics affiliated to Mazandaran University of Medical Sciences during April to September 2019. Of these, 129 people were infected with Covid-19 (9.2%). The variables of hypertension, diabetes, age, sex, TSH, Anti TPO Ab, Body mass index, duration of hypothyroidism and Amount of levothyroxine per week in the studied subjects were investigated. The information in the file was statistically analyzed by SPSS version 24 software. By correcting the effect of age, sex, duration of hypothyroidism, diabetes, BMI, TSH and Anti TPO in multivariable logistic regression analysis with covid, the effect of TSH was significant. (P-value<0.05). The risk of covid in people with higher TSH increased 1.062 times.(OR: 1.062, p value=0.015, 1.012-1.114) Based on the obtained results, the frequency of covid-19 in hypothyroid patients can be influenced by TSH level. Therefore, routine evaluation of thyroid function in hospitalized patients with Covid-19 is necessary. Disclosure: Nothing to disclose.

Keywords:
hypothyroidism, Covid -19, hypothyroidy, TSH

Paper ID: 155

Data-driven phenomapping for novel classification for cardiovascular outcomes compared with traditional obesity index: Tehran Lipid and Glucose Study

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Abstract:
Abstract This study aimed to propose a data-driven framework for classification of at-risk people for cardiovascular outcomes regarding obesity and metabolic syndrome.A population-based prospective cohort study with a long-term follow-up.Data from the Tehran Lipid and Glucose Study (TLGS) were interrogated.12 808 participants of the TLGS cohort, aged ≥20 years who have followed for over 15 years were assessed.Data for 12 808 participants, aged ≥20 years who have followed for over 15 years, collected through TLGS as a prospective, population-based cohort study, were analysed. Feature engineering followed by hierarchical clustering was used to determine meaningful clusters and novel endophenotypes. Cox regression was used to demonstrate the clinical validity of phenomapping. The performance of endophenotype compared with traditional classifications was evaluated by the value of Akaike information criterion/Bayesian information criterion. R software V.4.2 was employed.The mean age was 42.1±14.9 years, 56.2% were female, 13.1%, 2.8% and 6.2% had experienced cardiovascular disease (CVD), CVD mortality and hard CVD, respectively. Low-risk cluster compared with the high risk had significant difference in age, body mass index, waist-to-hip ratio, 2 hours post load plasma glucose, triglyceride, triglycerides to high density lipoprotein ratio, education, marital status, smoking and the presence of metabolic syndrome. Eight distinct endophenotypes were detected with significantly different clinical characteristics and outcomes.Phenomapping resulted in a novel classification of population with cardiovascular outcomes, which can, better, stratify individuals into homogeneous subclasses for prevention and intervention as an alternative of traditional methods solely based on either obesity or metabolic status. These findings have important clinical implications for a particular part of the Middle Eastern population for which it is a common practice to use tools/evidence derived from western populations with substantially different backgrounds and risk profiles.

Keywords:
cardiac epidemiology, epidemiology, lipid disorders, obesity.

Paper ID: 158

Poor Quality of Sleep is a Risk Factor for poor blood sugar control in Patients with Type 2 Diabetes

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Abstract:

Introduction: One of the factors affecting the health status of patients with diabetes is the quality of sleep. Low quality of sleep can also affect disease control and complications. This study was conducted with the aim of investigating the relationship between sleep quality and determinants of blood sugar control status (FBS, HbA1c) in patients with type 2 diabetes. Materials and Methods: In this cross-sectional descriptive study, 250 patients with type 2 diabetes were included in the study in 2022. Sampling was convenience from among those who referred to the diabetes clinic of Velayat Hospital, Qazvin. The checklist of personal-social information, the checklist of clinical characteristics and the Pittsburgh sleep quality Index (PSQI) were used to collect information. Spearman's correlation coefficient, Mann-Whitney's test and Regression modelswere used for data analysis.

Results: The mean total sleep quality score of the participants was 7.60 ± 4.37, and 70% of them had poor sleep quality. The mean and standard deviation of FBS was 207.72±75.40 mg/dL and HbA1c was 8.58±1.92. Among the areas of sleep quality, sleep duration ($r=0.488$, $P<0.001$) and the amount of sleeping pills consumed ($r=0.420$, $P<0.001$) had the strongest relationship with HbA1c and FBS, respectively. According to the logistic regression model, poor sleep quality increases the chance of poor blood sugar control (HbA1c≥7) by 3.17 times. According to the simple linear regression test, poor sleep quality can increase fasting blood sugar by 36 mg/dL. Conclusion: The present findings showed a direct relationship between poor sleep quality and poor diabetes control. Therefore, ensuring sleep hygiene should be considered an important part of the treatment and care of patients with type 2 diabetes for better management of their blood sugar.

Keywords:
Sleep Quality, Fasting Blood Sugar, Glycosylated Hemoglobin, Type 2 Diabetes

Paper ID: 159

Diabetic foot ulcer status is a risk factor for reducing sleep quality and emotional distress in type 2 diabetic patients

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Abstract:

Introduction: Diabetic foot ulcer affects the quality of life of patients with diabetes. Therefore, diabetic foot ulcer can also affect important components such as emotional distress and sleep quality. These two components are effective factors in controlling the disease and its complications in patients with diabetic foot ulcers. The present study was conducted with the aim of determining predictors of emotional distress and sleep quality in patients with diabetic foot ulcers. Materials and methods: In this cross-sectional descriptive study, 109 patients with type 2 diabetes referred to the diabetes clinic of Velayat Hospital, Qazvin were included by convenience sampling. The data collection tool included the checklist of personal-social information, University of Texas Wound Classification System, and Emotional Distress Questionnaire (IR-PAID-20) and the Pittsburgh Sleep Quality Index (PSQI). Regression models, Spearman's correlation coefficient and Mann-Whitney's test were used for data analysis. The data was analyzed by SPSS-v25 software.

Results: The average duration of diabetes in the participants was 11.90 ± 6.32 years. According to the Texas classification, about 10% of patients had stage D wounds and 50% had grade three wounds. The total score of sleep quality and emotional distress were 10.21 ± 4.02 and 49.81 ± 19.94, respectively. Also, ANOVA test showed that there was a relationship between the grade and stage of the wound with the score of emotional distress and sleep quality ($p<0.001$). Based on the multiple linear regression model, Factors such as wound grade, wound stage were identified as predictors of emotional distress ($p<0.05$). According to Spearman's correlation test, there was a direct relationship between sleep quality score and emotional distress ($r=0.85$, $p<0.001$) Conclusion: Wound status was identified as a common predictor of emotional distress and sleep quality in diabetic foot patients. It is recommended to take place with effective interventions to prevent and treat diabetic foot ulcers. Because in addition to healing the wound, it prevents complications such as poor sleep quality and high emotional distress

Keywords:
emotional distress, sleep quality, type 2 diabetes, diabetic foot ulcer

Paper ID: 161

Effect of socioeconomic status in transition of Covid-19 pandemic on blood sugar control in patients with diabetes

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Abstract:

Introduction: Diabetes is the most common endocrine disease and the main goal in diabetes is to control blood sugar and prevent its complications. Cognitive, behavioral, emotional and social factors play a role in the path of diabetes and its regulation and control. The findings show that the prevalence of diabetes in low-income neighborhoods is higher than in wealthy neighborhoods. The negative economic effects of the corona pandemic may be different from the tightening of social distancing measures and the prolongation of its implementation. Therefore, we decided to conduct a study with the aim of determining the effect of socioeconomic status in transition of Covid-19 pandemic on blood sugar control in patients with diabetes. Methods: This study was a retrospective cohort study. The samples were randomly selected from the stratified type (blocking with cards: double blind). Data were analyzed using descriptive statistics, independent t-test and paired t-test. A significance level of $p<0.05$ is considered.

Results: The results of the present study indicated that the majority of the participants had type 2 diabetes, the average age was 58.3±3.2 years, and 63% were in the lower middle level economically. Also, there was an inverse relationship between HbA1C level and socioeconomic status. There was a statistically significant difference between the case and control groups in terms of blood sugar control($p<0.05$). Conclusion: According to the results of the present study, less access to resources in people with low socioeconomic level is associated with lower blood sugar control and a higher average HbA1C. Therefore, more complications and more costs imposed on the healthcare system and less quality of life in patients can be expected. Therefore, it is suggested to consider planning for patients with low socio-economic level in the conditions of communicable and even non-communicable diseases in order to prevent more imposed costs.

Keywords:

Diabetes, blood sugar, economic status, social status

Paper ID: 163

Non-alcoholic fatty liver disease across endocrinopathies: Interaction with sex hormones

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Abstract:
Nonalcoholic fatty liver disease (NAFLD) is the most frequent chronic liver disease globally. NAFLD is strongly associated with metabolic syndrome and it has been recently suggested that to rename NAFLD as metabolic dysfunction-associated fatty liver disease (MAFLD). Evidence indicates that endocrine disorders may have major roles in the development, progression, and severity of NAFLD. This disease has been studied in different endocrine axes and accumulating body of clinical and experimental studies have reported that NAFLD is associated with polycystic ovarian syndrome (PCOS), hypopituitarism, growth hormone deficiency (GHD), hypogonadism and other endocrine dysfunctions. In the present review, we discussed the epidemiological and clinical evidence on the epidemiology, pathophysiology, and management of NAFLD in endocrine disorders, with an emphasis on the effects of sex-specific hormones/conditions as well as molecular basis of NAFLD development in these endocrine diseases. Overall, we found a link between a wide variety of endocrine disorders and NAFLD. Treatment of the endocrine diseases may have beneficial effect on NAFLD.

Keywords:
NAFLD, sex hormonal, endocrinopathies

Paper ID: 165

Food intake, obesity and anthropometric status of patients at Deziani Nutrition Clinic in Gorgan in 2019

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Abstract:
Intake of calories and nutrients play a vital role in controlling non-communicable diseases. Our aim was to determine the status of energy and nutrient intake in Deziani patients compared to standard reference intakes, along with determining the anthropometric status and laboratory indicators. Patients were selected by census. Food intake were obtained using a 24-hour food record during three non-consecutive days; Boy mass index (BMI) and laboratory results were evaluated. SPSS software 18 was used for statistical analysis. The average intake of each nutrient was used as a basis for comparison with the standard. The significance level was 0.05. 112 patients were examined. The average BMI of women was 27.5 ± 7.4, which was significantly different (Pvalue= 0.021) from men of 24.01 ± 4.5. The average energy intake of females was 1861.4± 485.5 kcal. In males, energy intake was 195 ± 224 kcal less than the recommended values (Pvalue=0.000). The intake of total fat in the diet was 59.97 (±26.9) grams. Daily fiber intake was 18.2 grams, which was significantly lower than the standard (Pvalue< 0.000). Protein and carbohydrate intake was lower than EAR in 19.2% and 2.7% of patients, and higher than 150% RDA in 19.7% and 78.9% of patients, respectively. The intake of vitamin A, vitamin B12, vitamin D, calcium, zinc and selenium was lower than EAR in 48.3%, 25.9%, 76.2%, 72.1%, 19% and 71.4%, respectively. The laboratory values of FBS, LDL and TG of the patients were relatively high, 116.25, 105.77 and 158.94 grams, respectively. The amount of FBS, Total Cholesterol and LDL were higher in women than in men, but HDL and Triglyceride were higher in men than in women (Pvalue < 0.05). The intake of energy and carbohydrates in the patients was high, but the intake of some micronutrients showed a great decrease. Sugar and lipid profile values were relatively high and obesity was more in women than men. It is necessary to carry out appropriate nutritional interventions to improve the food intake pattern of patients and Gorgan population.

Keywords:
Food intake, macronutrients, micronutrients, obesity

Paper ID: 167

Phytochemicals-based nanoparticles with therapeutic effects for diabetes

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Abstract:
Back ground: Diabetes Mellitus is one of the most common chronic metabolic diseases characterized by elevated blood sugar levels over a long period of time and eventually leads to damage to various body organs. To date, antidiabetic chemical drugs have not provided ideal clinical results for the effective and safe treatment of diabetes. In the last decade, the use of herbal medicines as complementary and alternative therapies for the management of chronic diseases such as diabetes has been increased. However, herbal medicinal products are complex mixtures of different bioactive compounds with different bioavailability. Therefore, this review aimed to access the effects of phytochemicals-based nanoparticles in treatment of diabetes as a new approach. Search strategy: Scientific search was conducted in the scientific databases of PubMed, Google Scholar, Science Direct, Scopus, and Web of Science using the Phytochemicals, Nanoparticles and Diabetes mellitus keywords.
Results: According to the results of our search, many plant-besed drugs with antidiabetic properties have been identified, the most important of which are pomegranate extract, aloe vera, ginger and cinnamon extract, Allium sativum, Berberine as well as phenolic compounds such as curcumin, Catechins, Gallic acid, quercetin, naringenin, magniferin, resveratrol and silymarin. On the other hand, considering the different bioavailability and occurrence of some side effects and interference of herbal medicines with chemical medicines, nanotechnology technique has recently been considered to reduce this disturbance and increase the compliance and comfort of patients in recent decades. Nano-formulations improve patients' compliance with treatment by providing different routes of administration, regulating release, improving biological stability, achieving target specificity and reducing toxicity via using nano-particles.
Conclusion: Overall, nanoscale formulations of plant-based antidiabetic molecules improve the compliance and clinical efficacy of herbal medicines by subverting their associated pharmacokinetic and biopharmaceutical barriers. Therefore, the development of nanoformulations can be envisioned as a potential solution to achieve the best clinical output of plant-derived antidiabetic molecules. However, further research is needed to provide clinically effective therapeutic nanoformulations of plant-derived antidiabetic molecules to control diabetes and related complications.

Keywords:
Diabetes mellitus, Phytochemicals- nano-formulation, Plant-based.

Paper ID: 169

Approach to Non diabetic Hypoglycemia in cancer patients at the end of life

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Abstract:
Pathologic hypoglycemia is a state of low blood glucose concentration associated with signs or symptoms. When the serum level of blood sugar reaches less than 70 mg/dL, most people will experience symptoms of hypoglycemia and confirmed by Whipple's triad include the following: (1) low levels of plasma glucose, (2) signs or symptoms suggesting of hypoglycemia, and (3) improvement in those signs or symptoms when the level of plasma glucose increases. Hypoglycemia in non-diabetic patients may occur due to an underlying terminal illness. This condition may develop in about 2% of patients undergoing palliative care in the last days of life. It is rarely considered in the literature. In the terminal phase of diseases the counterregula tory mechanism becomes defective due to underlying medical condition such as severe sepsis, end-stage renal disease, malnourishment, cor tisol deficiency, hepatic failure, peritoneal carcinomatosis, and multiorgan failures. According to studies, asymptomatic hypoglycemia in the oncologic setting may be due to the Warburg effect. Life expectancy of patients with spontaneous hypoglycemia due to multiple organ failure is very limited. One of the important challenges is how to approach to hypoglycemia in these patients. At the end of life, which focuses on comfort care, attention to two principles is essential: Determining the goal of care and shared decision making. Currently in palliative care setting, focus on a practical prognosis-based framework is recommended for hypoglycemia management. This framework includes three pathways: pathway 1 (prognosis less than 1 month), pathway 2 (prognosis very limited, usually less than 1 week), and pathway 3 (dying). The goal of treatment is to restore the level of consciousness, although the symptom may recur. The treatment of hypoglycemia in these patients is similar to other cases, but the important thing is to communicate effectively with the patient and caregivers, identify their expectations, and provide the necessary explanations about the treatment goals in end-of-life care.

Keywords:
hypoglycemia, end of life, palliative care

Paper ID: 170

The effect of replacing clarified butter with canola oil on Metabolic Syndrome components, fatty liver index, and insulin resistance in patients with Metabolic Syndrome

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Abstract:
The metabolic syndrome is characterized by a cluster of metabolic risk factors, including abdominal obesity, hyperglycemia, hypertriglyceridemia, hypertension, and low levels of high-density lipoprotein cholesterol. The presence of these risk factors significantly increases the prevalence of type 2 diabetes and cardiovascular disease. This syndrome is not limited to the USA and Europe, as it is also becoming more common in Asian countries. Previous research has shown that dietary and lifestyle modifications are more effective than pharmaceutical approaches in delaying the onset of the metabolic syndrome. Recent studies have linked metabolic stressors, such as high-saturated-fat diets, to obesity, insulin resistance, and the development of the metabolic syndrome. Animal-origin oils, including clarified butter or ghee, contain saturated and trans-fatty acids. Canola oil has significant potential as a suitable substitute for other oils rich in saturated fatty acids (SFA) in the diet, leading to a reduction in the intake of SFA. The aim of this trial was to investigate the effects of replacing clarified butter with canola oil in patients with metabolic syndrome on metabolic syndrome components, fatty liver index, and insulin resistance. During the 3 months, 42 patients with metabolic syndrome according to the IDF guideline {BMI (mean ± SD): 28.5 ± 2.5 kg/m2; mean age: 42.14 ± 6.8y} who consumed commonly clarified butter, were enrolled in this before-after designed clinical trial. Participants were instructed to follow a healthy diet and replace their consumption of clarified butter with and equivalent amount of canola oil. Results revealed a significant decrease in serum levels of HDL (-4 mg/dl), FBS (-5.6 mg/dl), TG (-12.5 mg/dl), weight (-3.6 kg), waist (-5.3 cm), and BMI (-1.3 kg/m2). However, no significant changes were found in systolic blood pressure and diastolic blood pressure. A significant decrease was observed in TC (-14.6 mg/dl) and LDL (-8.5 mg/dl), gamma-glutamyl transferase levels (-2.4 IU/l), FLI (-12.6), Insulin (-2.7 mU/l), HOMA-IR (-0.89), and increase in QUICKI (+0.02) after the intervention compared to the pre-intervention stage. In conclusion, the replacement of clarified butter with canola oil potentially benefit metabolic disorders. Disclosure: Nothing to disclose.

Keywords:
metabolic syndrome, obesity, clarified butter, canola oil, insulin resistance

Paper ID: 175

Molecular and Cellular Mechanisms Linking Bisphenol A to Obesity, Insulin Resistance and Diabetes: A Comprehensive Review of Recent Data

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Abstract:
Bisphenol A (BPA), an environmental endocrine disruptor, has been widespread discovered to be associated with metabolic disorders. It has recently got more attention between scientists as a risk factor for obesity and type 2 diabetes mellitus (T2DM) due to its ability to mimic natural oestrogens and bind to their receptors. Nonetheless, the molecular mechanism underpinning the environmental etiology of metabolic disorders has not been not fully clarified. This study is designed to explore the underlying mechanisms in BPA exposure during obesity and T2DM. BPA acts on several tissues involved in the regulation of glucose homeostasis and also by direct disruption of endocrine regulation, neuroimmune and signaling pathways, as well as gut microbiota resulting to obesity. It can alter multiple aspects of beta cell metabolism through modulation of oestrogen receptor signaling. Many in vivo and in vitro investigations reported that varying concentrations of BPA disrupt glucose homeostasis and pancreatic β-cell function by altering gene expression and mitochondrial morphology. In addition, epidemiological studies reveal a remarkable relationship between BPA exposure and the development of insulin resistance and impaired glucose homeostasis, although conflicting results gained by them. Therefore, this review summarizes the possible role and molecular mechanisms associated with BPA exposure that may lead to obesity, IR and T2DM based on evidence from in-vivo and in-vivo studies.

Keywords:
Bisphenol A, Endocrine Disruptors, Metabolic Disorders, Obesity, Type 2 Diabetes

Paper ID: 177

Association between ABO blood groups and thyroid dysfunction

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Abstract:
Today, there has been a focus on understanding the biological and immunological significance of blood groups and their relationship to various diseases, such as diabetes and cardiovascular diseases. Over the past few decades, numerous studies have been conducted to explore the association between blood groups and thyroid disorders. However, thus far, the findings of these studies have been contradictory. This investigation aims to examine the prevalence of different blood groups among patients with thyroid disorders. This study was conducted on 1880 patients who had thyroid disorders including hypothyroidism, hyperthyroidism, and thyroid nodules with or without thyroid dysfunction. These patients were referred to the Endocrine Clinic of Sari in the year 1400. We extracted and recorded demographic information, which included age, sex, weight, and height, presence of thyroid nodule in ultrasound, needle aspiration, and the patient's blood type. We used the T-Test and analysis of variance to compare quantitative variables, and Chi-Square for qualitative variables. Out of a total of 1880 individuals, 221 individuals (11.8%) were found to have normal results, 278 individuals (14.8%) were diagnosed with hyperthyroidism, and 1381 individuals (73.5%) were hypothyroidism. The average age of the individuals was 49.44±13.381 years, and the average body mass index was 28.66±5.35 kg/m2. Among the patients, 651 individuals (34.6%) had thyroid nodules, either with or without thyroid dysfunction. In terms of blood groups, 26.4% of the total subjects had blood group B, 9.8% had blood group AB, 22.3% had blood group A, and 41.4% had blood group O. Furthermore, 8.6% of these individuals were Rh-negative. There was no significant association between thyroid disorders and blood group (P=0.94) as well as Rh (P=0.34). In addition, there was no significant association between thyroid nodule and blood group (P=0.40) and Rh (P=0.17), although a significant relationship was found between nodule and thyroid function (P=0.00001). Although there was no statistically significant association between blood type and thyroid disorder, individuals with O blood type exhibited a higher frequency of thyroid dysfunction compared to those with other blood types.

Keywords:
ABO blood groups, Thyroid dysfunction, Hypothyroidism, Hyperthyroidism, Thyroid nodules

Paper ID: 178

Evaluation of the incidence of Permanent Hypothyroidism in infants who were treated for three years in Qazvin province (years 2010-2020)

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Abstract:
Introduction In Permanent Hypothyroidism : the patient's need for replacement therapy with levothyroxine is permanent . In Transient Hypothyroidism : the patient's need for replacement therapy with levothyroxine is variable and can range from days to years. Methods Data about detected and under-treatment patients were collected through the form of patient care (at the sampling site or the district health center). Children with hypothyroidism were reassessed after becoming 3 years of age (and discontinuation medicine for 4 weeks, and measuring the concentration of TSH and T4). Results From the beginning of 2010 to the end of 2020, 221579 newborns were screened and 958 unhealthy infants were identified. 798 detected patients who have completed three years of age have been evaluated: Of 798 patients, 31.2% of patients have permanent hypothyroidism and 68.8% have recovered. Of 299 patients with permanent hypothyroidism, 174 were male (58.2%) and 125 were female (41.8%). Conclusion 31.2% of detected patients have had permanent hypothyroidism. The average incidence was approximately 4.3 per thousand, with an actual incidence of 1.3 per 1000 . 51% of newborn infants have an initial TSH of 5 to 9.9. Keywords: Hypothyroidism- perevention – Evaluation- patient-Qazvin

Keywords:
Hypothyroidism- perevention – Evaluation- patient-Qazvin

Paper ID: 179

Evaluating the Anti-oxidative and anti-inflammatory effects of ethanolic extract of Allium porrum L. in rats with type 2 diabetes mellitus

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Abstract:
Type 2 diabetes mellitus (T2DM) is a common endocrine and metabolic disorder, worldwide. Meanwhile, Allium porrum L. has been recognized as one of the most eminent traditional herbal medicines with substantial health benefits. Currently, pharmaceutical therapy is the common remedy for T2DM; however, the effectiveness of these treatments is restricted due to their adverse side effects such as hepatotoxicity, and acute pancreatitis. Hence, finding natural alternatives with fewer adverse effects is necessary in order to advance the management of T2DM. The aim of the present study was to investigate the anti-oxidative and anti-inflammatory effects of ethanolic extract of Allium Porrum L. (AP) in rats with T2DM. Seventy male Sprague-Dawley rats were randomly divided into seven groups of 10 animals each. The induction of the T2DM was done using intraperitoneal injection of 65 mg/kg streptozotocin, together with 100 mg/kg nicotinamide after 10 minutes of the first injection. The study groups were as follows: HC) healthy control; HC.AP.100) healthy control rats receiving 100 mg/kg of AP extract; DC) diabetic control; DT.M.10) diabetic rats receiving 10 mg/kg metformin; DT.AP.50) diabetic animals receiving 50 mg/kg of AP extract; DT.AP.100) diabetic rats receiving 100 mg/kg of AP extract; and DT.AP.200) diabetic animals receiving 200 mg/kg of AP extract. All administrations were conducted by oral gavage for 6 weeks. Finally, blood samples were collected to determine the study biochemical parameters. By the end of the study, the level of serum MDA and TNF-α were significantly increased [((P=0.02) and (P=0.002), respectively)], while the SOD concentration was notably reduced (P=0.04) in the DC group in comparison with that of the HC group. Also, compared to the DC group, all rats treated with metformin and AP showed a significant decrease in the level of MDA and TNF-α, along with an enhancement of SOD concentration (All P<0.001). Moreover, in comparison with the DT.M.10, DT.AP.50, and DT.AP.100 treatments, the DT.AP.200 group revealed significantly higher improvement in serum TNF-α concentration [(P=0.04), (P=0.003), and (P=0.003), respectively]. Our findings revealed that the use of AP extract for six weeks may have beneficial effects on the oxidative stress and inflammatory biomarkers in T2DM-induced rat models.
Keywords: Oxidative stress, Inflammation, Allium Porrum, Diabetes

Paper ID: 184

The comparison of food and nutrient intake among Iranian adults with or without type 2 diabetes mellitus: a cross-sectional analysis of baseline data of the Shahedieh cohort study

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Abstract:
Type 2 diabetes mellitus (T2DM) is a progressive endocrine and metabolic disorder with a wide spectrum of pathologic conditions including insulin resistance, hyperglycemia, oxidative stress, body inflammation, and lipid profile abnormalities. There is a mutual relationship between T2DM and diet composition, pointing toward the importance of healthy nutritional habits as an important modifiable lifestyle factor in T2DM self-management. Therefore, the aim of the current study was to investigate the comparison of food and nutrient intake among adults with or without T2DM in a large prospective cohort study of Iranian population, Yazd, Iran. This cross-sectional study was performed in the context of the baseline data of Shahedieh cohort study, as a part of the PERSIAN cohort (Prospective Epidemiological Research Studies in Iran) on 5442 adults aged 35–70 years, living in the two municipal areas of Yazd city (Zarch and Shahedieh) Yazd province, Iran. All data regarding the dietary intake of participants were collected using a validated 121-item Food Frequency Questionnaire. The amount of food groups, total energy, micronutrients, and macronutrients intake were also analyzed using the Statistical Package for Social Sciences (version 23.0; SPSS Inc). Individuals without T2DM showed significantly higher intake of grains, legumes, total meat, fats, sweets, energy, carbohydrates, total fat, total cholesterol, saturated fatty acids, monounsaturated fatty acids, polyunsaturated fatty acids, vitamin B9, B12, A and D in comparison with patients with diabetes (all P-values<0.05). On the other hand, subjects with T2DM revealed significantly higher amount of vegetables, fruits, dietary fiber, biotin, potassium, and magnesium consumption compared to non-diabetic participants (all P-values<0.05). Given the notable differences detected in dietary habits of T2DM patients versus participants without diabetes, findings of the present study suggest that emphasis on education is required to improve the current dietary behaviors to assist the prevention procedure of T2DM complications.

Keywords: Nutrition Assessment; Diabetes Mellitus; Micronutrients; Vitamins; Diet

Paper ID: 189

Exercise Training and Aged Garlic Extract Attenuate Fetuin-A mRNA Expression in the Liver and Improve Metabolic Parameters in Obese Rats

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Abstract:
Obesity is associated with chronic diseases such as cardiovascular diseases (CVDs) and diabetes. Fetuin-A is mainly secreted by the liver and is known to affect inflammation and insulin resistance in obesity conditions, and removing it prevents free fatty acid (FFA)-induced insulin resistance. We examined the effects of aged garlic extract (AGE) with or without aerobic training (AT) on Fetuin-A mRNA expression in the liver and metabolic parameters in obese rats. Forty healthy male Sprague-Dawley rats were randomly assigned to normal diet (ND) (n=8) or high-fat diet (HFD) groups (n=32) and fed for 9 weeks. After 9 weeks ND group continued normal diet, and the HFD group was randomly divided into the HFD, HFD+AGE (600 mg/kg, once daily by gavage), HFD+AT (5 days/week, running on treadmill), and HFD+AGE+AT; that their interventions continued for 8 weeks (n=8). At the end of the protocol, after 48 hours of the last interventions and 12 hours fasting, animals were anesthetized with ketamine and xylazine injection, and whole blood collected from the heart for measurement of plasma levels of insulin, glucose and lipid profile. Moreover, the liver was immediately removed and stored in liquid nitrogen for measurement of Fetuin-A mRNA expression via real-time PCR. To estimate insulin resistance, the homeostasis model assessment of insulin resistance (HOMA-IR) was used. The significance of differences among groups was assessed using one-way analysis of variance (one-way ANOVA) followed by the post-hoc Tukey test. Statistically significant differences were considered for $p<0.05$. AGE, AT, and AGE+AT significantly decreased mRNA levels of Fetuin-A in the liver compared to HFD. (1.42±0.41, p=0.001; 1.62±0.40, p=0.002; and 0.74±0.31, p=0.001, compared to 2.41±0.29, respectively); where, AGE+AT was resulted in a greater decrease compared to AGE and AT ($p\leq0.01$). Furthermore, AGE, AT, and AGE+AT significantly decreased HOMA-IR compared to HFD; where, AT and AGE+AT resulted in a greater decrease compared to AGE (0.31±0.04, p=0.001; 0.22±0.04, p=0.001; and 0.18±0.04, p=0.001, compared to 0.49±0.04, respectively). Moreover, AGE, AT, and AGE+AT significantly improved all lipid profile parameters compared to HFD (all intervention $p<0.05$), where AGE+AT resulted in a greater improvement compared to AT in total cholesterol (TC), triglyceride (TG), and low-density lipoprotein (LDL) (all parameters $p<0.05$). Although AT and AGE reduce Fetuin-A mRNA expression in the liver and improve metabolic parameters, a combination of the two may be more effective.

Keywords:
Obesity, Insulin resistance, Lipid profile, Fetuin-A, Exercise training, Aged garlic extract

Paper ID: 190

Genotype and Phenotype Correlation in Patients with Phenylketonuria From North-East of Iran

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Abstract:

Background: Phenylalanine hydroxylase enzyme defects lead to a genetic metabolic disorder known as phenylketonuria (PKU), which is an inborn error of metabolism. PKU is caused by pathogenic variants in the PAH gene, which is inherited in an autosomal recessive pattern. The PAH gene is responsible for the function of the PAH enzyme, which converts phenylalanine (Phe) into tyrosine and is regulated by Phe (substrate) and tetrahydrobiopterin binding. When PAH activity is impaired, Phe accumulates and can cause symptoms such as intellectual disorders and seizures if not treated early. Material and Methods: In this study, the Sanger sequencing method was utilized to obtain the genotype of 34 phenylketonuria patients. The genotypes were classified into three categories: non-null+ non-null, null+ non-null, and null+ null, based on the coding effect of pathogenic variants. The phenotype of the patients was classified according to the highest phenylalanine level as mild hyperphenylalaninemia, mild, or classic. The correlation between genotype and phenotype was assessed using the Chi-square test with SPSS.26 software. Result: The results of the study showed a significant correlation between genotype and phenotype, with the majority of patients with a mild phenotype carrying at least one non-null pathogenic variant. Conclusion: In the northeast region of Iran, patients with at least one non-null mutation are likely to exhibit a mild phenotype and respond well to BH4 therapy.

Keywords:

Phenylketonuria, PKU, PAH, mutation, Genotype, Phenotype

Paper ID: 194

Mutation identification in the ATP7B gene related to Wilson disease.

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Abstract:

Background: Wilson disease is an autosomal recessive inherited disorder caused by a disturbance in copper metabolism. It can manifest with isolated hepatic, neurological, or psychiatric symptoms or a combination of them. The disease is attributed to mutations occurring in the ATP7B gene, which can be either missense or nonsense mutations. Some mutations are more prevalent in specific populations; for instance, 35% to 45% of Wilson disease patients in European populations are affected by the p.His1069Gln mutation, while in Asian populations, 57% of cases are related to the p.Arg778Leu mutation. Although Wilson disease is considered one of the most common inherited liver diseases, a comprehensive study on this disease has not been conducted in northeastern Iran. The ATP7B gene comprises 21 exons. In this study, we aimed to evaluate the ATP7B in northeastern Iran, employing a methodical exon-by-exon evaluation through Sanger sequencing. Methods: After obtaining informed consent, blood samples were collected from 20 families including patients and their parents. DNA was extracted using the salting-out method. Primers were designed for 21 exons of the ATP7B gene, and PCR reactions were performed. Sanger sequencing was conducted for the most common mutation-containing exons. Co-segregation analysis was performed within affected families.

Results: Sequencing of 5 of the most common mutation-containing exons (exons 14, 8, 13, 15, 18) has been completed so far. A definitive diagnosis was made in 6 families. The variant c.3188C>T (p.Ala1063Val) in exon 14 was found in 3 families, while single occurrences of mutations c.3207C>A (p.His1069Gln) in exon 14, c.2930C>T (p.Thr977Met) in exon 13, and c.2866-2A>C in exon 13 were observed. Intriguingly, all identified variants co-segregated meticulously with the clinical phenotypes within the respective familial cohorts. Discussion: Wilson disease is a treatable condition, and early detection is of utmost importance. Therefore, a genetic approach might be useful to differentiate this disease from similar conditions at younger ages. Exon 14 was the first and most common exon studied in our research. We recommend that for genetic diagnosis of patients with suspected Wilson disease, this exon should be the initial focus of investigation.

Keywords:

ATP7B gene, Wilson disease, mutation, Genotype, Phenotype, copper

Paper ID: 197

The mechanism of arginine vasopressin on stress

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Abstract:
Stress can be both physically and mentally challenging for the body to adapt to keep homeostasis. In this study, we have focused on key factors in participating in stress and we have surveid on the significant role of corticotropin-releasing factor (CRF) and arginine-vasopressin (AVP) and the synergic effects of these two factors. An important system that plays a key role in the body's response to stress is the hypothalamic-pituitary-adrenal (HPA) axis. AVP released from hypothalamic parietal neurons effects on anterior pituitary corticotrophs by activating the V1b receptor and stimulating ACTH secretion. CRF also collaborates with AVP in the acute response to stress. The purpose of this study is to review the mechanism of AVP on stress.

Keywords:
AVP, CRF, ACTH, HPA axis, stress

Paper ID: 201

Retrospective study of gastrointestinal cancers diagnosed in type 2 diabetic population compared to non-diabetic control group

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Abstract:
Today, both diabetes and cancer are among the most common diseases of the present age, and the question of how high the risk of gastrointestinal cancer is in diabetic patients has been investigated in various studies. What is important in the recent study is 'whether Can accurate control of diabetes reduce the incidence of gastrointestinal cancers in diabetics?". In response to this question, special attention should be paid to the following: the unknown mechanism of cancer and associated conditions such as insulin resistance, high insulin in the stages of hyperinsulinemia, age and gender of the patient, drug use, obesity, and abnormal metabolism of lipids and carbohydrates. Therefore, we decided to compare people in the diabetic and control groups. Therefore, we compared 5612 diabetics in three well controlled groups, weak control and uncontrolled with the control group of 2484 people based on A1c. For this purpose, we used a questionnaire with answers Yes/No used. Based on the results obtained, there was a difference in the rate of gastrointestinal cancer in diabetic patients and the control group, but this difference was not significant($P<0.01$), but there was a significant difference in the well controlled diabetic group compared to the other two groups in the incidence of gastrointestinal cancer, so that the first group They are significantly less affected by gastrointestinal cancers than other diabetic groups.

Keywords:
diabetes , gastrointestinal , cancer ,type2 , HbA1c

Paper ID: 208

Investigation of bone density status in patients with chronic hypothyroidism with levothyroxine intake during 6 years

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Abstract:
Osteoporosis is the most common metabolic bone disease and 50% of white Asian women experience osteoporotic fractures during menopause and one-eighth of men of other races experience osteoporotic fractures during their lifetime.The discussion of secondary osteoporosis, especially with the use of levothyroxine, and the misconceptions of the society and sometimes our colleagues made us investigate this issue in this study. This is a prospective study of 124 patients with permanent hypothyroidism during 6 years who are treated with levothyroxine by controlling thyroid hormone tests and measuring bone density. According to the findings, only one case of femur fracture in one of the patients was due to accident trauma and not related to osteoporosis, and in the rest of the cases, no significant change in the direction of bone density reduction was observed according to age and gender. Therefore, taking levothyroxine as a treatment for hypothyroidism is not an issue that should be stopped due to the possibility of secondary osteoporosis and fractures related to it. A recent study showed that compliance with the appropriate dose of levothyroxine in the control and treatment of hypothyroidism in people over 50 years of age has no It does not have a negative effect on bone density.

Keywords:
osteoporosis , hypothyroidism , levothyroxine , chronic , bone densitometry

Paper ID: 211

Interaction of dietary insulin index and dietary insulin load with lncRNA MALAT1 and TUG1 on metabolically healthy versus unhealthy obesity phenotypes

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Abstract:
Obesity, a multifaceted metabolic disorder, has become a major global health challenge. Dietary insulin index (DII) and insulin load (DIL), may play a crucial role in determining obesity phenotypes. Furthermore, long non-coding RNAs (lncRNAs) MALAT1 and TUG1 have been linked to metabolic regulation. The present study aims to assess lncRNAs MALAT1 and TUG1 in metabolically healthy obese (MH) and metabolically unhealthy obese (MUH) phenotypes in overweight and obese women and investigates their interaction with DII and DIL in these two obesity types. This cross-sectional study was conducted on 242 overweight and obese women, aged between 18 and 48 years. Body composition, anthropometric indices, dietary intake, DII, DIL, and biochemical parameters were assessed. The Karelis criterion was used to classify individuals into MH and MUH phenotypes. Real-time quantitative polymerase chain reaction (PCR) was employed to evaluate transcript levels of lncRNAs MALAT1 and TUG1. Among the participants, 73.1% of individuals were identified as MUH and 26.9% as MH, with a mean (standard deviation) age of 36.54 (8.96) years. The results showed that in the crude model, there was a marginally significant interaction between DII and the MALAT1 gene on MUH (β = 0.05; 95% CI: -0.004, 0.10; P = 0.068). Also, after adjusting for age, energy intake, physical activity, and supplement use, a statistically significant association emerged, demonstrating that the interaction between DII and the MALAT1 gene significantly increased the odds of MUH obesity (β = 0.07; 95% CI: 0.01, 0.13; P = 0.016). There was no association between tertiles of DII, DIL, TUG, and MALAT1 and odds of MUH. However, the interaction between DII and the MALAT1 gene displayed increasing odds of MUH obesity. Further research, including larger studies and prospective surveys, is required to validate these results. Disclosure: Nothing to disclose.

Keywords:
Dietary insulin load, dietary insulin index, metabolically healthy obese, metabolically unhealthy obese

Paper ID: 212

The interaction between long non-coding RNA MALAT1 and TUG1 with dietary fatty acid quality indices on visceral adiposity index and body adiposity index in overweight and obese individual

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Abstract:
Apart from dietary fat intake quality, long non-coding RNAs (lncRNAs) like taurine upregulated gene 1 (TUG1) and metastasis-associated lung adenocarcinoma transcript 1 (MALAT1), may play regulatory roles in the etiology of obesity, lipogenesis, and abiogenesis, according to recent studies. In the present study, we aimed to examine the interaction between MALAT1 and TUG1 and Cholesterol-Saturated Fat Index (CSI) on the visceral adiposity index (VAI) and body adiposity index (BAI). In this cross-sectional study 346 overweight and obese women (18-68 years), were conducted. A validated and reliable 147-item semi-quantitative food frequency questionnaire (FFQ) to calculate the dietary intake and the indexes of dietary fat quality intake as CSI. Anthropometric values, body composition ad biochemical parameters were measured by standard methods. For assessing MALAT1 and TUG1 based on the criteria of the Minimum Information for Publication of Quantitative (MIQE) standards, a real-time polymerase chain reaction (real-time PCR) was carried out. The mean (±SD) age and BMI of our participants were 36.568 ± 8.978 years and 31.215 ±4.182 kg/m2 respectively. We observed a positive association with the MALAT1 and VAI in crude (β =3.646, 95%CI = 1.950 to 5.341, p < 0.001) and adjusted (β =8.338, 95%CI = 6.110 to 10.566, p < 0.001) models. Moreover, after adjustment for age, energy intake, smoking, income, and physical activity, significant positive interaction was observed between MALAT 1 expression and CSI on BAI (β: 0.130, 95%CI: 0.019,0.240, p=0.022) and marginal positive interaction has shown on VAI (β: 0.718, 95%CI: -0.028,1.463, p=0.059). we did not observe any significant interaction between CSI and TUG1 expression on BAI and VAI in both crude and adjustment models. Based on the present study's findings, it seems that there may be positive interactions between MALAT1 and CSI on VAI and BAI in overweight and obese women. No associations were seen between TUG1 and above-mentioned variables. However, further prospective studies are warranted to confirm these results. Disclosure: Nothing to disclose.

Keywords:
long non-coding RNAs, taurine upregulated gene 1, metastasis-associated lung adenocarcinoma transcript 1, visceral adiposity index, body adiposity index, dietary fat intake quality.

Paper ID: 213

Efficacy of propolis as a bioflavonoid source on Diabetes Mellitus: a review study

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Abstract:

Introduction: Propolis, one of nature's richest bioflavonoid sources, can speed up mending diabetes mellitus. Diabetes mellitus is a syndrome considered a chronic endocrine metabolic which causes oxidative stress. As reported by the World Health Organization it is estimated that by 2045, 10% of the world's population will suffer from this disease. Methods: To select related articles, a systematic search was done on Scopus, PubMed, Web of Science, Science Direct, Irandoc, and Google Scholar from 2000 to 2023. The keywords were "propolis", "diabetes mellitus", and "honey bee products". Among n=1463 initially identified articles due to the exclusion and inclusion factors, 17 articles had the eligibility to be used in the current study.

Results: According to reviewed articles, generalized oxidative stress is the possible reason for most diabetes mellitus complications. Glucose oxidation and protein glycosylation produce free radicals in pancreatic β-cells that inhibit insulin secretion by demolishing β-cells and DNA changes. There are several recommended chemical remedies for diabetes mellitus especially for T2DM are sulfonylureas, glucagon-like peptide-1 agonists, HMG-CoA reductase inhibitors, and the most commonly used medication for diabetes mellitus control alpha-glycosidase by decreasing the absorption of monosaccharides in the intestine. It was reported that propolis has anti-diabetic and anti-hyperglycemia by neutralizing reactive oxygen species (ROS), inhibiting α-glucosidase, translocation of GLUT-4, and increasing Apo A-1 (Increased HDL). Conclusion: The results of studies showed that propolis has anti-hyperglycemia, anti-inflammatory, antioxidant, immunomodulatory, pancreas protective, anti-microbial, and antitumor properties. Furthermore, due to the propolis properties, it can be recommended as a functional food to reduce complications of diabetes and improve individual health.

Keywords:

propolis, bioflavonoids, diabetes mellitus, anti-hyperglycemia, antioxidants.

Paper ID: 214

Investigation the interaction between long non-coding RNA MALAT1 and TUG1 gene expression with dietary fatty acid quality indices on cardiometabolic risk factors in overweigh and obese women

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Abstract:
Obesity is one of the most important factors involved in cardiometabolic diseases, wich are influenced by the interactions of environment and genetics. long non-coding ribonucleic acids (lncRNAs) serve various biological purposes, wich their irregular expression linke to several metabolic diseases. Therefore, we aimed to investigate the interaction between lncRNAs Metastasis-Associated Lung Adenocarcinoma Transcript 1 (MALAT1) and Taurine Upregulated Gene 1 (TUG1) gene expression with dietary fatty acid quality indices (DFQI) on cardiometabolic risk factors among overweight and obese women. In this study 346 overweight and obese women (18-50 years), were included. Anthropometric measurments and blood pressure were measured. Biochemical determination was performed. A validated and reliable 147-item semi-quantitative food frequency questionnaire (FFQ) and the short form of the International Physical Activity Questionnaire (IPAQ) were used to evaluate food intake and physical activity, respectively. The cholesterol-saturated fat index (CSI) was used as a measure of DFQI. A real-time polymerase chain reaction (real-time PCR) was performed to evaluate lnc-RNAs MALAT1 and TUG1 gene expression. The mean (±SD) age and BMI of our participants were 36.568±8.978 years and 31.215±4.182 kg/m2 respectively. After controlling for confounding variables, significant positive interactions between lncRNAs MALAT1 and second tertile of CSI, were observed on triglyceride (TG) (β =6.268, 95%CI = 0.760 to 11.776, p = 0.026), HOMA-IR (β =0.121, 95%CI = 0.013 to 0.230, p = 0.029), waist circumference (WC) (β =0.427, 95%CI = 0.036 to 0.818, p =0.032), and waist to hip ratio (WHR) (β =0.005, 95%CI = 0.001 to 0.008, p = 0.016). It appears that lncRNA MALAT1, via interactions with DFQI, is involved in elevated cardiometabolic risk factors. However, further prospective studies are necessary to elucidate this concept. Disclosure: Nothing to disclose.

Keywords:
Long non-coding ribonucleic acids, Metastasis-Associated Lung Adenocarcinoma Transcript 1, Taurine Upregulated Gene 1, Cardiometabolic risk factors, Obesity.

Paper ID: 215

Interaction Of Genetics Risk Score (GRS) and Fatty Acids Quality Indices (FAQI) on Metabolically Healthy and Unhealthy Obesity Phenotype

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Abstract:
The growth in obesity and rates of abdominal obesity in developing countries is due to the dietary transition. Environmental changes, such as increasing the quality of dietary fat consumed, may be useful in preventing or improving the obesity or unhealthy obesity phenotype in persons who are genetically predisposed to it, although this is not yet firmly established. Therefore, in the current study, we look at how dietary fat quality indices with metabolically healthy obesity (MHO) or metabolically unhealthy obesity (MUO) based on Karelis criteria interact with genetic predisposition in Iranian female adults. In thi study 279 obese and overweight women participated in the current cross-sectional investigation. Dietary assessment was done using a 147-item food frequency questionnaire (FFQ) and dietary fat quality was assessed by cholesterol-saturated fat index (CSI) and the ratio of omega-6/omega-3 (N6/N3) essential fatty acids. Three single nucleotide polymorphisms—MC4R (rs17782313), CAV-1 (rs3807992), and Cry-1(rs2287161) were genotyped by polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP) technique and were combined to produce the genetic risk score (GRS). Using a multi-frequency bioelectrical impedance analyzer, body composition was evaluated. The participants were divided into MHO or MUO phenotypes after the metabolic risk was evaluated using Karelis criteria. We found significant interactions between GRS and N6/N3 in adjusted model controlling for confounding factors (age, BMI, energy, and physical activity) (β= 2.26, 95% CI= 0.008–4.52, P= 0.049). In addition, we discovered marginal significant interactions between GRS and N6/N3 in crude (β= 1.92, 95% CI= -0.06–3.91, P= 0.058) and adjusted (age and energy) (β= 2.00, 95% CI= -0.05–4.05, P= 0.057) models on MUO obesity phenotype. However, no significant interactions between GRS and CSI were shown in both crude and adjusted models. There were significant interactions between GRS and N6/N3 in and marginal significant interactions between GRS and N6/N3 on MUO phenotype. Disclosure: Nothing to disclose.

Keywords:
Unhealthy obesity phenotypes, Genetics risk score, Fatty acids quality indices.

Paper ID: 216

Investigation of the interaction between cholesterol-saturated fat index (CSI) and the ratio of omega-6/omega-3 (ω-6/ω-3) essential fatty acids and genetic risk score on components of metabolic syndrome (MetS) among overweight and obese women

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Abstract:
Metabolic syndrome (MetS) is one of the major public-health challenges. Fatty acid quality indices are novel determinants of MetS and their interactions with genetic factors may have an impact on metabolic syndrome risk. Therefore, we aimed to investigate the interaction between cholesterol-saturated fat index (CSI) and the ratio of omega-6/omega-3 (ω-6/ω-3) essential fatty acids and genetic risk score (GRS) on components of MetS among overweight and obese women. In Thisstudy 279 overweight and obese women were included. Dietary intake was evaluated by 147-item food frequency questionnaire. Cholesterol-saturated fat index (CSI) and the ratio of omega-6/omega-3 (ω-6/ω-3) essential fatty acids were considered as fatty acids quality indices (FAQI). The unweighted GRS was calculated using the risk alleles of the three single nucleotide polymorphisms (MC4R (rs17782313), CAV-1 (rs3807992), and Cry-1(rs2287161)). There was a positive interaction between tertile2 of GRS and tertile2 of N6/N3 ratio on waist circumferences (WC) (β= 7.95, 95%CI= 0.83,15.08, P= 0.029), tertile3 of GRS and tertile2 of N6/N3 ratio on diastolic blood pressure (β= 5.93, 95%CI= -0.76,12.63, P= 0.083), and fasting blood sugar (β= 6.47, 95%CI= 0.59,13.53, P= 0.073), tertile3 of GRS and tertile3 of N6/N3 ratio on triglyceride (TG) (β= 54.42, 95%CI= 1.76,107.08, P= 0.043), and tertile3 of GRS and tertile3 of CSI on percent body fat (%BF) (β= 3.55, 95%CI= -0.35,7.45, P= 0.075). Also tertile2 of GRS in the interaction with tertile3 of CSI leads to a decrease -8.35 mg/dl in high-density lipoprotein (HDL) level after adjustment in (β= -8.35, 95%CI= -17.34,0.62, P= 0.068). It seems the interaction of GRS and FAQI is positively associated with several components of metabolic syndrome such as WC, TG and BF%. Disclosure: Nothing to disclose.

Keywords:
Genetic risk score; Fatty acid quality index; Metabolic syndrome; Obesity.

Paper ID: 217

The association between dietary acid load (DAL) and quality of life (QOL) in overweight and obese adult women

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Abstract:
The results of research are contradictory about the relationship between the dietary acid load (DAL) and quality of life (QOL). Therefore, the aim of this study was to evaluate the DAL and QOL in overweight and obese women. A total of 377 women were included. A validated FFQ was used to assess dietary intakes, DAL was estimated based on PRAL and NEAP. SF-36 questionnaires were used to assess QOL. PRAL was significantly associated with QOL criteria, such as general health (β= -2.96, 95%CI= -5.61 to -0.30, P= 0.02) and physical functioning (β= -3.21, 95%CI= - 5.82 to -0.60, P= 0.01) in crude and adjusted models. A negative association between NEAP and general health was found in crude (β=-3.07, 95%CI= - 5.65 to -0.48, P= 0.02) and adjusted models. We found a significant positive association between DAL and general health, as well as physical functioning, among overweight and obese women. Disclosure: Nothing to disclose.

Keywords:
Dietary acid load, Quality of life, Overweight, Obesity.

Paper ID: 218

The Association Between Long noncoding RNAs MALAT1 and TUG1 and Mental Disorders: Stress, Depression, and Anxiety among overweight and obese women

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Abstract:
Mental disorders, particularly stress, depression, and anxiety, are prevalent health concerns that intersect with the complexities of overweight and obesity, often disproportionately affecting women. In recent years, the exploration of long noncoding RNAs (lncRNAs) has emerged as a promising avenue of research, shedding light on their potential involvement in the pathophysiology of mental disorders within the context of overweight and obesity in women. The present study aims to assess the association between lncRNAs taurine upregulated gene 1 (TUG1) and metastasis-associated lung adenocarcinoma transcript 1 (MALAT1) and mental disorders: stress, depression, and anxiety among overweight and obese women This cross-sectional study was conducted on 242 overweight and obese women, aged between 18 and 48 years. Body composition, anthropometric indices, dietary intake, and biochemical parameters were assessed. Mental health was evaluated using Depression Anxiety Stress Scales (DASS-21). Real-time quantitative polymerase chain reaction (PCR) was employed to evaluate transcript levels of lncRNAs MALAT1 and TUG1. The results showed that in the, there was a significant association between expression of lncRNA TUG1 and mental disorders (β = 0.08; 95% CI:0.002 - 0.17; P = 0.044), depression (β = 0.21; 95% CI: 0.007 - 0.44; P = 0.043) and stress (β = 0.18; 95% CI: -0.01 - 0.38; P = 0.067) after adjusting for age, energy intake, physical activity, weight, job, education and total fat intake. Also, after adjusting for confounding factors, a statistically significant association emerged between expression of lncRNA MALAT1 and anxiety (β = 0.25; 95% CI:0.04 - 0.46; P = 0.019). There was positive correlation and association between TUG, and MALAT1 expression and mental disorders including stress, depression, and anxiety. Nevertheless, further research is required to fully unravel the complexities of these lncRNA-mediated regulatory pathways and their relevance in the broader landscape of mental health in this specific population. Disclosure: Nothing to disclose.

Keywords:
Anxiety, Depression, Long noncoding RNAs, Mental disorders, Stress, Obesity.

Paper ID: 219

A Case of 28-year-old pregnant woman with resistant hypercalcemia

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Abstract:

Introduction: The occurrence of primary hyperparathyroidism in pregnancy is rare. Most cases of this disease are asymptomatic during pregnancy (23-80%), and then it may be diagnosed late or not diagnosed at all. In the beginning, its symptoms may be mild, but if the treatment is delayed, it will quickly progress to multi-system involvement, such as central nervous system, kidney failure, and cardiac arrhythmia. Delay in treatment can lead to pregnancy loss, fetal death, and even maternal death. Case presentation: A 29 years old nulliparous woman in the 14th week of gestating was admitted in the endocrinology ward of Urmia Imam Khomeini Hospital of Iran with chief complaints of weakness, sleepiness, constipation and polyuria. She weighed 65kg with the height of 167cm. Her blood pressure and body temperature were 120/70 and 36.8 °C, respectively. Examination of other organs was unremarkable. Laboratory tests showed hypercalcemia (calcium levels were 13.9 and 11.7 and 12.8 mg/dl). Serum Ph and PTH levels were 2.57 mg/dL and 158.4 pg/ml respectively. The diagnosis of primary hyperparathyroidism was made. Ultrasonography of the neck revealed a hypoechoic region of 14 × 6 mm under the right thyroid lobe which could be consistent with enlarged right lower parathyroid adenoma with severe hyperemia. In abdominal ultrasonography she had nephrolithiasis and the fetus was alive at 14 weeks with a normal heartbeat and amniotic fluid. Intense hydration and diuresis were started with the simultaneous administration of normal saline and IV Lasix. Subsequently, subcutaneous calcitonin 100 unit TID was also added to the treatment regime for further reduce the serum calcium level. The patient still had high calcium levels of 12.8 and 11.5. Due to insufficient response to medical treatment, surgical consultation was requested for the patient and she underwent right lower parathyroidectomy. After the surgery, serum levels of calcium and PTH decreased significantly, and she received calcium carbonate and Rocaltrol tablets. She was discharged three days after surgery with a good general condition and an uneventful pregnancy and normal calcium level. Conclusion: Considering the dangerous complications of hypercalcemia caused by primary hyperparathyroidism during pregnancy, timely surgical intervention and removal of parathyroid adenoma in addition to medical treatment in the second trimester is very helpful and life-saving.

Keywords:

Primary hyperparathyroidism, Hypercalcemia, Pregnancy, Parathyroidectomy

Paper ID: 220

Downregulation of excessive autophagy by aerobic exercise training and vitamin D3 supplementation interventions in diabetes cardiomyopathy rats

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Abstract:
Type 2 diabetes is one of the endocrine disorders that causes cardiovascular complications such as diabetes cardiomyopathy through disruption of cellular homeostasis. Autophagy is one of the processes involved in establishing cellular homeostasis and also plays an important role in regulating cardiomyocyte survival and death during stress. It has been reported that autophagy can play a dual role (decrease or increase) in diabetes. On the other hand, many evidences show that exercise and nutritional interventions have a useful role in the prevention and treatment of cardiovascular diseases. Regulation of autophagy during exercise is a bidirectional process. For cardiovascular diseases caused by insufficient or excessive autophagy, exercise training restores the normal function of autophagy and delays the progression of cardiovascular disease. Previous studies have shown that vitamin D3 has a positive role in regulating autophagy. However, we hypothesize that vitamin D3 and aerobic training or the interaction of both can regulate autophagy in the heart tissue of rats induced with diabetes cardiomyopathy. 32 male Wistar rats were randomly divided into 2 groups induced to diabetes cardiomyopathy (through high-fat diet + streptozotocin) including: diabetes control (DC), diabetes + aerobic training (DAT), diabetes + vitamin D3 (DVD) and diabetes + aerobic training + vitamin D3 (DVDAT) and normal control (NC). The aerobic training groups ran on the treadmill for eight weeks, five sessions a week, each session for one hour with an intensity of 60 maximum running speed. Vitamin D3 receiving groups received a dose of 1000 IU/kg vitamin D3 intraperitoneally every week. Autophagy factors including ULK-1 and LC3-II in heart tissue and HOMA-IR index were measured. The results showed that diabetes cardiomyopathy increased the protein level of ULK-1 and LC3-II in heart tissue ($p<0.001$). While aerobic training and vitamin D3 decreased the protein content of ULK-1 and LC3-II in the heart tissue of rats induced to type 2 diabetes ($p<0.001$). At the same time, the results showed that the HOMA-IR index in the groups of DAT and DVD and the interaction of both (DVDAT) had a significant decrease compared to the DC group ($p<0.001$). In general, it can be said that diabetes cardiomyopathy causes excessive autophagy in the heart tissue, which can be reduced by aerobic training and vitamin D3, and in this way, probably decreases the HOMA-IR index in induced diabetes cardiomyopathy rats.

Keywords:
Excessive Autophagy, VDR, Aerobic training, HOMA-IR, Diabetes cardiomyopathy.

Paper ID: 224

SARS-CoV-2 deteriorates host cellular metabolism toward complicated disorders

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Abstract:
The 2019 coronavirus (COVID-19) pandemic caused by SARS-CoV-2 has grown into the world's largest public health crisis. The mortality rate of COVID -19 in the metabolic and vascular disorders was nearly 50%. In particular, direct links between COVID-19 and metabolic systems reported. Therefore, not only patients with metabolic disorders such as obesity, hypertension, non-alcoholic fatty liver disease and diabetes are at risk of developing severe COVID-19 disease, but also infection with SARS-CoV-2 could lead to long multi-organ failures. Despite many advance studies in understanding the pathogenesis of SARS-CoV-2, little known about the metabolic pathways and the main features of virus in manifestation of multi-organ failures and new diseases, particularly deterioration of cellular metabolism toward new organ disorders. Therefore, this review is a comprehensive attempt to describe the complexity of interactions between SARS-CoV-2 and cellular metabolic activities using current scientific evidence from clinical, pathophysiological, and molecular studies to highlight the challenging evidences and introducing the main gaps in this regards for further studies.

Keywords:
COVID-19; Lipid metabolism; obesity; Glucose metabolism; AMPK; SREBP; Diabetes mellitus; Protein metabolism; pregnancy; newborn

Paper ID: 226

The combined effect of intense intermittent exercise and vitamin D3 on some factors related to sarcoplasmic reticulum stress in the liver tissue of rats induced to type 2 diabetes

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Abstract:
Obesity caused by overeating and lack of exercise has become one of the major problems of modern societies and is associated with many comorbidities including type 2 diabetes (T2DM). New researches have shown that endoplasmic reticulum stress is related to changes in the immune system and metabolic disorders, so it is likely to play a role in type 2 diabetes and its complications. On the other hand, it has been proven that exercise and nutritional supplements play an important role in regulating endoplasmic stress. However, in the present study, the combined effect of intense intermittent exercise and vitamin D3 on some factors related to sarcoplasmic reticulum stress in the liver tissue of rats induced to type 2 diabetes was investigated. For this purpose, 40 Wistar rats with a weight range of 180-220 grams were induced to type 2 diabetes after induction of high-fat diet and streptozotocin. Then randomly divided into 5 groups: 1) healthy control (NC), 2) diabetes control (DC), 3) diabetes + intense interval training (D+HIIT), 4) diabetes + vitamin D3 (D+VD3) and 5) Diabetes + intense interval training + vitamin D3 (D+HIIT+VD3) were divided. The intense interval training group ran on a treadmill for 5 sessions every week for eight weeks, and the group receiving vitamin D3 received 1000 IU/kg of vitamin D3 daily as a subcutaneous injection. The results of the present study showed that CHOP and eIF2 proteins in liver tissue were significantly higher in the DC group than in other research groups. This is while it was significantly lower in D+HIIT, D+VD3 and D+HIIT+VD3 groups. In general, it can be said that intense intermittent exercise and vitamin D3 and the interaction of both reduce endoplasmic stress in the liver tissue of rats induced to type 2 diabetes.
Keywords: interval training, endoplasmic reticulum stress, type 2 diabetes, obesity