### Oral Presentations

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<tr>
<td>10:10-10:35</td>
<td>Activation of the GPX4/TLR4 signaling pathway participates in the alleviation of selenium yeast on deltamethrin-provoked cerebrum injury in quails</td>
<td>Biqi Han</td>
<td>Northeast Agricultural University, China</td>
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<td>10:35-11:00</td>
<td>Exploring the liver fibrosis induced by deltamethrin exposure in quails and elucidating the protective mechanism of resveratrol</td>
<td>Xue Yang</td>
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<td>Oleuropein and its new peracetylated derivative ameliorate joint inflammation and destruction in a murine collagen-induced arthritis model via activation of the nrf2/hO-1 antioxidant pathway suppression of mAPKs and nf-kB activation</td>
<td>Maria Luisa Castejon Martínez</td>
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<td>A new oleoanthol metabolite, (-)-Methyl-oleoanthol, regulates the inflammatory and oxidative response induced by LPS in murine macrophages and splenocytes: Molecular signaling pathways and epigenetic histones marks implicated</td>
<td>Tatiana Montoya García</td>
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<td>Krishna Kumar Patel</td>
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<td>12:15-12:40</td>
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<td>Wioletta Wujicka</td>
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<td>12:40-13:05</td>
<td>Gaseous Ozone: A new strategy to manage stored product insects in rice grains</td>
<td>Ravi Pandiselvam</td>
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<td>Comparative phytochemical analysis of the major secondary metabolites of <em>Arum italicum</em> and <em>Arum maculatum</em> and their correlation with their pharmacological properties</td>
<td>Nikoletta-Chara Pothou</td>
<td>University of Nicosia, Cyprus</td>
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<td>13:45-14:00</td>
<td>Improvement of tomato quality and yields using inoculative augmentation with some indigenous soil inoculants</td>
<td>Olukotun Debo Barnabas</td>
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<td>14:15-14:30</td>
<td>Asteraceae plant extract enhance cancer cell death by gamma radiation</td>
<td>Saloua Kouass Sahbani</td>
<td>University of Sherbrooke, Canada</td>
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<td>Natalia Moreno Castellanos</td>
<td>Universidad Industrial de Santander, Colombia</td>
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# Scientific Program

## 3rd Online International Conference on Diabetes & Endocrinology

### Day 02 - April 26, 2022 (10:00-14:00 BST)

#### Oral Presentations

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<td>Elif Unsal Avdal</td>
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<td>Gyanendra Singh</td>
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<td>Associations of combined genetic and adherence to a healthy lifestyle risk with incident type 2 diabetes</td>
<td>Maliha Sarfraz</td>
<td>The Women University Multan, Pakistan</td>
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<td>Microencapsulation of extra virgin olive oil by spray-drying: Effect of wall materials composition</td>
<td>Donia Chaabane</td>
<td>Hungarian University of Agriculture and Life Sciences Budapest, Hungary</td>
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<td>Pesticide residue levels of stored maize grain for possible use as a nutrition or industrial supplement</td>
<td>Daniel Amoako Darko</td>
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<td>Souad Belkebir</td>
<td>An Najah National University, Palestine</td>
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<td>12:00-12:25</td>
<td>Determination of phytochemical constituents in methanolic extract of Caralluma Edulis</td>
<td>Umbreen Rashid</td>
<td>Quaid-i-Azam University, 3GC Women University, Abasyn University, Pakistan</td>
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<td>12:25-12:50</td>
<td>Effect of Ketogenic Diet on Cancer: A Systematic Review and Meta-Analysis of Randomized Controlled Trials</td>
<td>Adeleh Khodabakhshi</td>
<td>University of Medical Sciences, Iran</td>
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<td>Vitamin D supplementation and exercise: an experimental approach in over weighted ovariectomized mammary tumors-bearing mice</td>
<td>Sahar Aldekwer</td>
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<td>Assessment of the knowledge on insulin therapy among adult diabetics patients in Jabir Abuleiz center, Khartoum, Sudan</td>
<td>Rania Farah</td>
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Day-1
Oral Presentations
ACTIVATION OF THE GPX4/TLR4 SIGNALING PATHWAY PARTICIPATES IN THE ALLEVIATION OF SELENIUM YEAST ON DELTAMETHRIN-PROVOKED CEREBRUM INJURY IN QUAILS

Biqi Han, Jiayi Li and Zhigang Zhang
Northeast Agricultural University, China

Abstract

**Background:** Deltamethrin (DLM) is a member of pyrethroid pesticide widely applied for agriculture and aquaculture, and its residue in the environment seriously threatens the bio-safety. The cerebrum might be vulnerable to pesticide-triggered oxidative stress. Selenium (Se) possesses a number of biological activities.

**Objective:** Our study focused on investigating the therapeutic potential of Se yeast (SY) on DLM-induced cerebral injury in quails after chronically exposing to DLM and exploring the underlying mechanisms.

**Methods:** Forty male quails were distributed into 4 groups randomly: control, DLM (45 mg/kg body weight intragastrically), SY (0.4 mg/kg SY added in standard diet), and DLM + SY. We measured biomarkers of oxidative stress, determination of blood index, performed histopathological analysis, terminal deoxynucleotidyl transferase-mediated dUTP nick-end labeling assay, and relative mRNA and protein levels.

**Results:** The results showed that SY supplementation ameliorated DLM-induced oxidative stress, apoptosis, and the release of inflammatory mediators in the quail cerebral. SY elevated the content of Se and increased glutathione peroxidase 4 (GPX4) level in the DLM-treated quail cerebral. Furthermore, SY enhanced antioxidant defense system by upregulating nuclear factor-erythroid-2-related factor 2-associated members. Meanwhile, SY diminished the changes of apoptosis- and inflammation-associated proteins and genes including toll-like receptor 4 (TLR4).

**Conclusion:** Our study demonstrates that SY attenuates DLM-induced cerebral injury in quails via activation of the GPX4/TLR4 signaling pathway. GPX4 may be an effective therapeutic target for the treatment of DLM-induced cerebral injury. Furthermore, this study not only provides a novel insight for elucidating DLM-induced cerebrum toxicity, but also a practical foundation for the treatment of DLM-induced damage by dietary supplement of SY.

**Biography**

Biqi Han (https://orcid.org/0000-0001-9780-4475) is a Master degree candidate of the College of Veterinary Medicine in the Northeast Agricultural University of China. Prof. Zhigang Zhang (https://orcid.org/0000-0002-4974-5850) is her supervisor. Her major is Clinical Veterinary Medicine and her main research interests are Animal-derived Food Safety and Environmental Toxicology. She participated in a number of scientific research topics and got some valuable phased research achievement after several years of in-depth research. At present, she has published a SCI academic papers as the first author in *Biological Trace Element Research* (IF = 3.738) journal. Besides, she has published six papers as a co-author in SCI journals with a total Impact Factor of 40.429. Research interests include animal-derived food safety.
EXPLORING THE LIVER FIBROSIS INDUCED BY DELTAMETHRIN EXPOSURE IN QUAILS AND ELUCIDATING THE PROTECTIVE MECHANISM OF RESVERATROL

Xue Yang, Jaiyi Li and Zhigang Zhang
Northeast Agricultural University, China

Abstract

**Background:** Deltamethrin (DLM) is one of the most popular pesticides due to its high insecticidal activity and environmental friendliness. However, the extensive over-use of DLM threatens livestock and poultry, even humans. DLM is mainly metabolized in liver which is easily attacked by toxic substances. Resveratrol (trans-3, 4, 5-trihydroxystilbene, Res) is an effective oxidant.

**Objective:** This study investigated the potential molecular mechanism that DLM induced liver fibrosis in quails, and clarified the role of Res in the liver injury.

**Methods:** Forty quails were randomly divided into 4 groups: control group, DLM group (45mg/kg b.w.), Res group (500mg/kg feed), and DLM + Res group. We measured biomarkers of oxidative stress and liver function, and performed histopathological analysis, transmission electron microscopy, biochemical indexes, TUNEL, quantitative real-time PCR, and western blot analysis.

**Results:** The results showed that DLM led to changes in the levels of oxidative stress- and apoptosis-related proteins and genes, and caused excessive oxidative stress and apoptosis. Hydroxyproline content and the fibrosis-related mRNA expressions including collagen I, SMAD family member 3 (Smad3), α-smooth muscle actin, transforming growth factor-β1 (TGF-β1), and fibronectin were significantly increased. The relative proteins and genes levels of nuclear factor-κB (NF-κB) and its downstream protein tumor necrosis factor-α (TNF-α) were also significantly increased. However, Res attenuated these changes, indicating that Res has a therapeutic effect on DLM-induced oxidative stress, apoptosis, and fibrosis in the quail liver.

**Conclusion:** Chronic exposure to DLM induces oxidative stress via the nuclear factor erythroid 2-related factor 2 expression inhibition and apoptosis, and then results in liver fibrosis in quails by the activation of NF-κB/TNF-α and TGF-β1/Smad3 signaling pathway. In future, Res may be used as a feed additive to prevent liver fibrosis in livestock and poultry.

**Biography**

Xue Yang is an undergraduate of the College of Veterinary Medicine in Northeast Agricultural University, China. Zhigang Zhang (https://orcid.org/0000-0002-4974-5850) is her supervisor. Her major is veterinary medicine, and the main research interests are Animal-derived Food Safety and Environmental Toxicology. She has participated in a number of scientific research topics, and cultivated excellent scientific thinking after several years of in-depth research. Research interests include animal-derived food safety.
OLEUROPEIN AND ITS NEW PERACETYLATED DERIVATIVE AMELIORATE JOINT INFLAMMATION AND DESTRUCTION IN A MURINE COLLAGEN-INDUCED ARTHRITIS MODEL VIA ACTIVATION OF THE NRF2/HO-1 ANTIOXIDANT PATHWAY SUPPRESSION OF MAPKS AND NF-ΚΒ ACTIVATION

Maria Luisa Castejon Martínez, C Alarcon-de-la-Lastra, M A Rosillo, T Montoya, J G Fernandez-Bolaños and M Sanchez-Hidalgo
University of Seville, Spain

Abstract

Background: Oleuropein (OL), an olive tree secoiridoid, and its peracetylated derivate (Per-OL) have exhibited several beneficial effects reducing inflammatory responses on LPS-stimulated macrophages and in a murine model of systemic lupus erythematosus (SLE).

Objective: The present study was designed to evaluate the effects of both dietary OL and Per-OL supplementations on collagen-induced arthritis (CIA) murine model.

Methods: Three-weeks-old DBA-1/J male mice were fed from weaning with 0.05% (w/w) OL, 0.05% or 0.025% Per-OL. After six weeks of pre-treatment, arthritis was induced by bovine collagen type II by tail base injection (day 0) and mice received a booster injection on day 21. Mice were sacrificed 42 days after first immunization. Then, blood was recollected and paws were histologically and biochemically processed.

Results: OL and Per-OL diets significantly prevented histological damage and arthritic score development. In addition, serum collagen oligomeric matrix protein (COMP) and metalloproteinase 3 (MMP)-3 as well as proinflammatory cytokines levels in paw homogenates (including tumor necrosis factor (TNF)-α, interleukin (IL)-1β, IL-6, IL-17 and interferon (IFN)-γ) were significantly ameliorated in those animals fed with dietary secoiridoids. Mitogen-activated protein kinases (MAPKs) and nuclear transcription factor kappa-B (NF-κB) activations were drastically down-regulated whereas nuclear factor E2-related factor 2 (Nrf2) and heme oxygenase-1 (HO-1) protein expressions were significantly up-regulated in those mice fed with OL and Per-OL diets.

Conclusion: In conclusion, in this study we have demonstrated that dietary OL and Per-OL treatments exert beneficial effects on arthritis CIA in mice improving the oxidative events via Nrf2/HO-1 activation and returning proinflammatory markers to basal levels through blockage of MAPKs and NF-κB signaling pathways reactivation. OL and Per-OL supplements might provide a basis for developing a new dietary strategy for the prevention of rheumatoid arthritis.

Biography

Maria Luisa Castejon Martínez was graduated in Pharmacy from the University of Seville in 2014. Since that time, she is member of the research group CTS-259 of the Department of Pharmacology, Faculty of Pharmacy University of Seville (Spain). Her PhD studies were focused on the role of oleuropein and its derivatives in in vivo and in vitro models of rheumatic diseases, including rheumatoid arthritis and systemic lupus erythematosus. In addition, she carried out an international research stay at the Institute of Developmental Science, General Hospital of Southampton, University of Southampton (United Kingdom), focused on epigenetic pyrosequencing studies. She got her PhD in Pharmacy with International Mention at the University of Seville in February 2020. Currently, she is further investigating on the role of oleuropein in the epigenetic modulation in these inflammatory pathologies. Research interests include nutrition and dietetics, natural supplements, bioactive compounds and functional foods.
A NEW OLEOCANTHAL METABOLITE, (−)-METHYL-OLEOCANTHAL, REGULATES THE INFLAMMATORY AND OXIDATIVE RESPONSE INDUCED BY LPS IN MURINE MACROPHAGES AND SPLENOCYTES: MOLECULAR SIGNALING PATHWAYS AND EPIGENETIC HISTONES MARKS IMPLICATED

Tatiana Montoya Garcia, C Alarcón de la Lastra, ML Castejón, R Muñoz-García, J Altarejos and M Sánchez-Hidalgo

Universidad de Sevilla, Spain

Abstract

Background: Oleocanthal (OLE), a characteristic and exclusive secoiridoid of the Oleoaceae family, is found mainly in extra virgin olive oil (EVOO). Recently, the presence of an active methyl metabolite of OLE, met-OLE, has been reported after acute intake of OO in several tissues. However, to date, there are no experimental studies on the beneficial properties of the active metabolite or its epigenetics actions in the immunoinflammatory response.

Objective: To investigate the anti-inflammatory role of met-OLE through inflammasome and MAPKs signaling pathways, evaluating related epigenetic histone marks in LPS-stimulated macrophages and splenocytes.

Methods: Isolated macrophages and splenocytes were pretreated with OLE or met-OLE and, exposed to LPS (5 ng ml⁻¹) for 18 hours. Pro-inflammatory cytokine levels were measured in cell supernatants by ELISA. Western blot was used to evaluate the protein expression in cell whole lysates from macrophages or extracted histones from spleen cells.

Results: Met-OLE inhibited LPS-induced the production of pro-inflammatory cytokines such as over-expression of proteins COX-2, mPGES-1 in murine macrophages. In addition, met-OLE was able to significantly decrease the activation of p38, JNK, and ERK mitogen-activated protein kinases (MAPKs) and blocked canonical and non-canonical inflammasome signaling pathways. Finally, OLE and met-OLE pre-treated spleen cells counteracted LPS induction, preventing dysregulated methylation and acetylation of histones.

Conclusion: These results provide novel mechanistic insights into the beneficial effects of met-OLE on the regulation of the immunoinflammatory response through epigenetic changes in histone marks.

Biography

Tatiana Montoya Garcia completed her Degree in Pharmacy in 2016. Since that time, she is member of the research group CTS-259 of the Department of Pharmacology, Faculty of Pharmacy, University of Seville (Spain). Her research is focusing on the validation of olive secoiridoids and their derivate in the immune-inflammatory response. Her interest in epigenetic led her to stay at the prestigious Institute of Developmental Science, General Hospital of Southampton, University of Southampton (United Kingdom), where she developed specific techniques in pyrosequencing, and in the Institute of Biomedical Investigation (A Coruña, Spain), evaluating histone modifications and microRNAs regulation specifically aimed at understanding the role of oleocanthal in epigenetics mechanisms. She is close to the defense of her doctoral studies, concerning the functionality of oleocanthal as a nutraceutical and epigenetic modulator in several autoimmune and inflammatory diseases, such as rheumatoid arthritis and lupus erythematosus systemic. Research interests include autoimmune diseases, bioactive compounds, functional foods, inflammation, immune, lupus erythematosus systemic, nutrition and dietetics, natural supplements and rheumatoid arthritis.
RAPID PHYSICAL CHARACTERIZATION OF MANGOES USING REFLECTED UV IMAGE PROCESSING

Krishna Kumar Patel\textsuperscript{1,2} and Abhijit Kar\textsuperscript{1}

\textsuperscript{1}Indian Agricultural Research Institute, New Delhi, India
\textsuperscript{2}Department of Agricultural Engineering, F/O Agricultural Sciences, Ghazipur (VBSP University Jaunpur), India

Abstract

Postharvest physical characterization of mangoes is utmost important for timely reaching in the market and minimization of post-harvest losses (economical and qualitative). Instant measurements of physical parameters and defection detection are necessary for rapid post-harvest management and operation of mangoes. The techniques available in the public domain are either time consuming or costly of insufficient in recognition of hidden surface defects of mangoes. The reflected UV image processing, thus, dealt with such surface defects and measures some physical parameters of mangoes cv. Chausa and Dashehari. Images of mangoes were acquired using UV camera in UV light, processed using Lab View s/w and algorithm steps were developed for image analysis and measurement of fruit’s diameters and shape attributes (Area, perimeter, Max Feret diameter, Waddell disc diameter, elongation factor, compactness factor, Heywood circulatory factor, type factor). Fruit’s diameters were compared with results obtained by vernier calipers using paired t-test, the 95% limits of agreement (Bland-Altman plot) and regression analysis test. Results were consistent and correlations between both methods were found to be noticeably high. Shape factor (elongation and Heywood circulatory) can be used for the differentiation between the cultivars. In addition, various defects such as latex stain, fungal area, scratches on surface, dry tissues, etc. undetectable using color camera were detected successfully. The present study, thus, can be used to develop UV computer vision system for automatic sorting/grading of mangoes and mechanization of post-harvest operations.
GASEOUS OZONE: A NEW STRATEGY TO MANAGE STORED PRODUCT INSECTS IN RICE GRAINS

Ravi Pandiselvam
ICAR-Central Plantation Crops Research Institute, Kerala, India

Abstract

Background: The post-harvest losses of grains are mainly due to stored product insects. The chemicals and/or current practice used to control the insects are toxic and creating environmental problem. In this context, the grain industries are looking for new techniques that control the stored product insects.

Objective: To study the effect of ozone concentration and exposure time on the mortality rate of three major stored product insects.

Methods: The lab scale ozone diffusion chamber was designed and developed. The developed system consists of oxygen concentrator, ozone generator, treatment chamber, ozone analyzer and ozone de-structor. The grain was placed in the hermetically sealed chamber. The stored product insects were introduced in the treatment before treatment. The insect’s mortality results were recorded after 24 h from the treatment.

Results: Rhyzopertha dominica shows more tolerant to ozone than Sitophilus oryzae and Tribolium castaneum. Fumigation at low concentration took more time to reach 100% mortality. The grain moisture content and density also play a major role in ozone diffusion. The half life of ozone is low at high moisture grains.

Conclusion: High concentration of ozone and low exposure time could control the stored product insects in short fumigation time. Ozone is an alternative method for stored product insect’s control.

Biography

Ravi Pandiselvam is a young academician actively engaged in food engineering research. He received B.Tech Agricultural Engineering in 2010 and M. Tech. (Agricultural Processing & Food Engineering) in 2012 from the Tamil Nadu Agricultural University. After completion of doctorate studies from Tamil Nadu Agricultural University (2015), he has joined ICAR as a scientist (Agricultural Process Engineering) at Central Plantation Crops Research Institute (CPCRI), Kasaragod, India in 2016. Dr. R. Pandiselvam has played an instrumental role in the first report of the reaction kinetics and diffusion of ozone gas in paddy grains, rice grains, and green gram under Indian climatic condition. This work was presented in “International Conference on Innovative Insect Management Approaches for Sustainable Agro Eco System” and was conferred with a best poster award. He has contributed in design and development of minimal processing machine for tender coconut, continuous type coconut testa removing machine, tender coconut cutting machine and preservation protocol for trimmed tender coconut and also developer/co-developer many value-added food products (viz., Kalpa Krunch, Frozen Coconut Delicacy and Matured Coconut Water based Beverages), which are commercialized to many entrepreneurs. Dr. R. Pandiselvam authored more than 75 articles published in the national and international journals of repute. He has been author or co-author of 5 books and 40 book chapters. Dr. R. Pandiselvam is the associate editor of Measurement: Food (Elsevier Journal) and Frontiers in Nutrition. He has served/serving as a Guest Editor for Ozone Science and Engineering (Taylor & Francis Journal), Journal of Food Process Engineering (Wiley-Blackwell Journal) and Journal of Texture Studies. Dr. R. Pandiselvam also features in the editorial board member of Ozone Science and Engineering, Quality Assurance and Safety of Crops & Foods, Nutrition & Food Science, and Current Agriculture Research Journal. He conferred with National Academy of Agricultural Sciences (NAAS) Young Scientist Award, NAAS Associate and Indian Society of Agricultural Engineers (ISAE)-Distinguished Service Award-2020.
**PHYSALIS PERUVIANA L: HIGH IMPACT OVER THE INSULIN SIGNALLING PATHWAYS**

**Fabrice Vaillant¹-³, Alberto Ángel-Martín⁴ and Natalia Moreno-Castellanos⁴**

¹Centro de Investigación La Selva, Colombia  
²French Agricultural Research Centre for International Development (CIRAD), Colombia  
³Université de La Réunion, France  
⁴Universidad Industrial de Santander, Colombia

**Abstract**

**Introduction:** Golden berry (*Physalis peruviana L.*) is an exotic fruit exported from Colombia to different countries around the world. A review of the literature tends to demonstrate a hypoglycaemic effect with an improvement in insulin sensitivity after oral ingestion of fruit extracts in animal models. However, little is known about their potential effects in humans, and very little is known about the mechanisms involved.

**Methods:** An untargeted metabolomics strategy using high-performance chemical isotope-labelling LC-MS was applied. The blood samples of eighteen healthy adults were analysed at baseline, at 6 hours after the intake of 250 g of golden berry (acute intervention) and after 19 days of daily consumption of 150 g (medium-term intervention). Fifty-eight and 43 biomarkers were identified with high confidence, respectively, after the acute and medium-term interventions.

**Results:** Considering up- and downregulated metabolites, three biological networks mainly involving insulin, epidermal growth factor receptor (EGFR) and the phosphatidylinositol 3-kinase pathway (PI3K/Akt/mTOR) were identified. The biological intracellular networks identified are highly interconnected with the insulin signalling Pathway.

**Conclusion:** Physalis peruviana intake may be associated with insulin signalling, which could reduce some risk factors related to metabolic syndrome.
Day-1
Poster Presentations
COMPARATIVE PHYTOCHEMICAL ANALYSIS OF THE MAJOR SECONDARY METABOLITES OF ARUM ITALICUM AND ARUM MACULATUM AND THEIR CORRELATION WITH THEIR PHARMACOLOGICAL PROPERTIES

Nikoletta-Chara Pothou and Michail I Plioukas
University of Nicosia, Cyprus

Abstract

Since many of our earliest therapeutic remedies were derived from plants or plant extracts, the pharmaceutical industry focused its research on natural products for the discovery of potential drug substances for the treatment of human diseases. The number of studies concerning agents deriving from natural products is also exponentially increasing. Arum italicum and Arum maculatum are two perennial plants, found in the Mediterranean region, in West Asia and North Africa, widely known for their pharmacological properties, with toxic calcium oxalate–containing fruits. Their toxicity is also attributed to their content in triglochinin, a cyanogenic glycoside. A.italicum is recommended by local populations for the treatment of coughs, eczema, rheumatoid arthritis, and hemorrhoids and for its antimicrobial properties. Traditionally, A.maculatum is used in herbal remedies because of its aphrodisiac properties and as a healing agent against ulcer, ascites and depression. The aim of this evaluative literature review is to highlight the therapeutic potential of these two species, via the most recent scientific studies, compare their traditional use as medicinal plants with their scientifically-proven documented phytotherapy, and report their major secondary metabolites via their phytochemical analysis. Phytochemical analysis on the above species resulted to the isolation of several terpenes. The most prominent category of secondary metabolites is the flavonoids, thus justifying the strong antioxidant capacity of the plants and their potential use as natural antioxidant agents. The above species seem to possess anticancer properties, since pharmacological studies evaluated their anti-proliferative and cytotoxic potential, and can be used for the treatment of hemorrhoids. It is important to emphasize the need to carry out further research studies and phytochemical analysis, so as to isolate more compounds that will justify the pharmacological action that is attributed to the above species. All this information may be useful for the promotion of the further use of these plants in medicinal products, justifying also their traditional use as beneficial to health.
Improvement and maintenance of soil fertility is essential in the post-covid economic recovery era. Tomato (*Lycopersicon esculentum mill*) is one of the most important vegetable crops in the world. To grow these crops successfully Nigeria depends heavily on chemical inputs such as fertilizers which is detrimental to soil and human health. The fruits of the crops still suffer inadequate nutritional value. Soil inoculants could be used as crop growth, nutrient acquisition and eventually, higher nutritional yields but most do not adapt well to another environment other than where they are naturally found. Therefore, an open field experiment was conducted in order to study the “Nutrients Yield Effects of Indigenous Microbial Inoculants on Tomato using autochthonous microbial consortia”. The experiment was laid in Randomized complete Block Design (RCBD) with three replications consisted of six inoculants samples; Indigenous (Phosphorous Solubilizing Bacteria (IPSB), A; *Azotobacter* sp., (IAZs) B Azospirillum sp., (IASs) C; Potassium Solubilizing Bacteria (IKSB), D; and co-inoculation of IPSB and IKS, E) and Control (commercial strains of the inoculula; CPSB, F, *Azotobacter* sp., (CAZs) G Azospirillum sp., (CASs) H; Potassium Solubilizing Bacteria (CKSB), I and co-inoculation of CPSB and CKSB, J). Yield parameters measured at intervals included; no. of leaves, plant height, root length, accumulated dry matter and average fruit weight. The yield were in the following decreasing order; E>B>G>J>I>H>C>A>D>F. The highest (E) having, height (55.9 cm); No. of leaves (248), dry matter accumulation (282.2 g), average fruit weight (50.8 g), root length (33.2 cm) and yield (2.01 kg/plant) respectively. The lowest (F) was, height (32.4 cm); No. of leaves (132), dry matter accumulation (154.2 g), average fruit weight (36.3 g), root length (27.2 cm) and yield (1.61 kg/plant) respectively. From the present investigations, it can be concluded that soil augmentation with indigenous inoculants improve tomato quality yields and should be preferred above their exotic, commercial strain counterparts.
TOXICITY OF WEIGHT LOSS SUPPLEMENTS IN HUMAN LIVER HEPG2 CELLS

Zoran Zhivikj, Tanja Petreska Ivanovska, Nikola Geskovski, Dushko Shalabalija, Kristina Shutevska, Marija Karapandjova and Lidija Petrushevska-Tozi

University Ss. Cyril and Methodius, Republic of North Macedonia

Abstract

Background: A worldwide use of natural/herbal weight loss supplements is evidenced along with patient perceptions of popular slimming aids that are easily available and free of adverse effects. Despite this, some are associated with side effects, even severe toxicities.

Objective: In vitro hepatotoxic potential of eight weight loss supplements available at the market of the Republic of North Macedonia was examined using human liver HepG2 cells.

Methods: The HepG2 cells were treated with test solutions at three concentrations respective to the minimum, the medium and maximum daily dosage recommended for each supplement, during 72 h at 37°C in 5% CO₂. Within the treatment, at predetermined intervals of 24, 48 and 72 h, the cells were evaluated by the biochemical endpoints of hepatocellular injury (AST, ALT, LDH, γGT and ALP) in combination with cellular viability measurements using tetrazolium bromide MTT-assay.

Results: The viability was significantly declined up to 95% in cells exposed to one multicomponent supplement with acai berry as a main active compound (p≤0.05), regardless of an exposing period. The treatment caused cytolysis as evidenced by the significant increase in LDH as well as rise in AST activity which is observed in severely damaged hepatocytes. The viability loss due to exposure to other supplements tested was ranging from 5 to 25%. Besides, the most of them have been shown to support the cell growth, especially within the initial 24 h exposure. In general, the viability results were in conjunction with changes in enzyme activities of the cells suggesting the utility of these markers in an in vitro analysis to predict hepatocellular stress.

Conclusion: In vitro hepatocellular testing may be used for screening of potential harmful features of weight loss supplements. This is a significant help for healthcare providers and patients to better recognize potentially toxic supplements until these products are more strictly regulated.

Biography

Zoran Zhivikj is a teaching assistant in Food and Nutrition and Toxicology at the Faculty of Pharmacy, University Ss. Cyril and Methodius in Skopje. He is an ongoing PhD student in the field of pharmaceutical sciences looking forward to gain more expertise in the areas of his scientific interest such as diet therapy and pharmaceutical toxicology. Besides practice work with students, he is deeply dedicated to scientific work expecting his efforts to provide significant contribution in improving the health and wellbeing. He is open and responsive to new ideas and implementation of new experimental models and methodologies to improve the knowledge and also focused on adopting more experience both in teaching and research activities. Research interests include dietetics, nutraceuticals and toxicology.
ASTERACEAE PLANT EXTRACT ENHANCE CANCER CELL DEATH BY GAMMA RADIATION

Saloua Kouass Sahbani

1University of Sherbrooke, Canada
2University Carthage, Taibah University, KSA

Abstract

Skin cancer is a common and a locally destructive cancerous growth of the skin. There are three major types of skin cancer: (1) basal cell carcinoma, (2) squamous cell carcinoma and (3) melanoma, though more dangerous, than the first two varieties. Radiation therapy is very effective for treating skin cancer. The use of and search for drugs derived from plants have accelerated in recent years. Plants are rich in a wide variety of secondary metabolites, which have been found in vitro to have antimicrobial properties. The purpose of our study was to report the effectiveness of the combination of the Asteraceae plant extract and radiotherapy in the treatment of the skin cancer. The Asteraceae plant extract used in traditional medicine to treat skin burning in Tunisia.

Here we investigate the radio protector effect of the aqueous Asteraceae plant extract on a DNA plasmid (pGEM-3Zf-). Aqueous solutions of the samples were irradiated with $^{137}$Cs $\gamma$-rays at various doses in the presence or absence of Asteraceae plant extract. Gel electrophoresis analysis shows that the aqueous Asteraceae plant extract prevent radiation-induced DNA damage. Moreover, we found that the aqueous Asteraceae plant extract has antibacterial, antiviral and antifungal activity. These results encourage us to continue our study in vivo to show the effectiveness of the Asteraceae plant extract to enhance cancer cells death with $\gamma$-radiation and to selectively protect the normal tissues against the tumoricidal effects of radiation.
Day-1
Video Presentation
RELATIONSHIPS AMONG CONSANGUINITY, FAMILY HISTORY, AND THE ONSET OF TYPE 1 DIABETES IN CHILDREN FROM SAUDI ARABIA

Laila Ahmed Albishi, Eman AlAmri and Asmaa Mahmoud

University of Tabuk, KSA

Abstract

Background: Type 1 diabetes mellitus is a chronic, life-long disorder that involves heterogeneous etiological factors. An important genetic risk factor is human leukocyte antigen class II of the major histocompatibility complex, which initiates the autoimmune destruction of beta cells. Factors such as consanguineous marriage appeared to increase the susceptibility of the Saudi population to T1DM and other diseases compared to other populations. Beyond the theoretical aspects of genomic association, we proposed that parental consanguinity, irrespective of HLA complex inheritance, might also play a role in the development of the disease.

Objective: To demonstrate the relationship among parental consanguinity, positive family histories of autoimmune disease, and the development of T1DM.

Methods: This is a cross-sectional case-control study enrolled patients with T1DM aged 6 months to 12 years in the period of 2000-2010. Control sample were 188 healthy controls enrolled through questionnaires distributed to parents after consent when visited the pediatric clinic; all parents were of Saudi origin. Consanguinity questions included first, second, and far cousins, and no consanguinity. The family history questions included autoimmune diseases in parents, grandparents, siblings, uncles, aunts, and cousins.

Results: The mean age of patients was 6.30 ± 3.07 years, which was significantly lower than that of controls 7.34 ± 3.17 years (p < 0.01). Patients with a positive family history of autoimmune disease were significantly more common in the patient group (p < 0.01) than in the control group (57 and 26, respectively). The rate of a family history of autoimmune disease did not significantly differ (p > 0.05) between the patient and control groups.

Conclusion: Parental consanguinity and family history of autoimmunity were not clearly linked to T1DM development in children, indicating that T1DM is a multifactorial disease. A history of affected first-cousin parents increases the risk of T1DM.

Biography

Laila is an assistant professor and consultant pediatric endocrinologist at the University of Tabuk, Saudi Arabia; she had her clinical training and qualification as a pediatric endocrinologist at King Salman Military Hospital. Additionally, she has post-graduate diplomas in endocrinology and obesity from University of South Wales, UK.

Currently, Dr. Laila is an enthusiastic teacher in the faculty of medicine, pediatric department, teaching undergraduate students endocrine disorders from pediatric aspects. She also covers the pediatric endocrine service in the pediatric in-patients ward and pediatric clinic at King Khalid Civilian Hospital.

Within the Medical School, she was a Vice-Dean of the faculty and a chief of the pediatric department where she led strategic administrative responsibilities towards faculty members and students.

Dr. Laila interested in type 1 diabetes, vitamin D, and obesity disorders. She also has considerable expertise in diagnosing and managing short stature, congenital hypothyroidism, and congenital adrenal hyperplasia. In addition, she deeply believes in a holistic approach to her patients, allowing plenty of time to discuss any concerns and wishes before involving them in a shared management approach.
Day-2
Oral Presentations
SELF-EFFICACY SCALE IN GESTATIONAL DIABETES: A SCALE DEVELOPMENT STUDY

Gökşen Polat and Elif Ünsal Avdal
İzmir Katip Çelebi University, Turkey

Abstract

Introduction-Aim: Gestational diabetes is a condition where the blood glucose level of the individual is normal before pregnancy and blood glucose regulation is impaired for the first time during pregnancy. Guidance and treatment of the person with gestational diabetes was planned and implemented in a methodological type in order to develop a scale to predict complications due to non-compliance with the treatment regimen and to determine the validity and reliability of the developed scale.

Materials and Methods: The population of the study consisted of all gestational diabetes patients who applied to the diabetes policlinic of Tepecik Training and Research Hospital, the diabetes policlinic of Izmir Katip Çelebi University Atatürk Training and Research Hospital. Individuals using insulin were sampled (n: 252). “Personal Information Form” was used to collect the research data. The Self-Efficacy Scale in Gestational Diabetes consists of 4 sub-dimensions. These are “Diet-Weight Management”, “Complication Measures”, “Compliance with Nutrition Education” and “Medical Therapy Practices”. When it was first developed, the draft scale consisting of 56 items was finalized with 23 items as a result of necessary validity and reliability studies. In this context;

Results: In the development of the scale, “Exploratory Factor Analysis, Confirmatory Factor Analysis, Barlett Test, Chi-Square Fit Test, Cronbach Alpha Test, Shapiro-Wilk Test, Hotelling T Test, Spearman Brown Coefficient, Guttman Split-Half Coefficient Test” were used. Results: In the validity and reliability study of the Self-Efficacy Scale in Gestational Diabetes, the Scope Validity Index was found to be 0.98. The scale consists of 4 sub-dimensions and for ‘Diet-Weight Management’ 0.97 for ‘Complication Precautions’ 0.98, for ‘Compliance with Nutritional Education’ 1.0 ve and for ‘Medical Therapy Practices’ 1.0 was calculated. The total Cronbach’s alpha value of the scale was determined as 0.654. The Cronbach alpha values of the scale sub-dimensions were found to be 0.735 for Diet-Weight Management, 0.718 for ‘Complication Precautions’ and 0.807 for ‘Compliance to Nutrition Education’ and 0.560 for Medical Therapy Applications.

Conclusion: According to these data; The Self-Efficacy Scale in Gestational Diabetes was found to be a valid and reliable scale.
ROLE OF ADIPONECTIN AND INFLAMMATORY MARKERS CRP, IL-6 AND TNF- ALPHA IN DIABETES MELLITUS

Gyanendra Singh¹ and Usha²

¹All India Institute of Medical Sciences, India
²Institute of medical sciences, India

Abstract

Introduction: Type 2 diabetes patient have low level of adiponectin and this level correlates with insulin sensitivity level. Similarly inflammatory markers play a role in the development of type 2 diabetes. Elevated levels of interleukin-6 (IL-6) and C-reactive protein (CRP) with increased risk of type 2 diabetes.

Aim: The purpose of the study was to determine the association of adiponectin and inflammatory markers in clinically diagnosed diabetes mellitus patient.

Material and method: Total 70 cases of diabetes mellitus in age group of 10 years to 65 years, 25 normal healthy control and 30 cases of complicated DM included in the study. Level of adiponectin, TNF-α, CRP and IL-6 was determined by ELISA kit method.

Result: In type I DM cases compared with type II DM cases with serum adiponectin level was found to be significantly low in type II DM cases (8.018 ± 4.23 vs 4.66 ± 2.59 pg/ml, p_ <0.001). CRP titre was found significantly raised in DM patient in comparison to the control (p_0.009) with a mean value of (0.935 ± 0.77mg/dl vs. 0.508 ± 0.29mg/dl), but in complicated type II DM there was significant increase in CRP titre as compared to the control (1.30 ± 0.85mg/dl vs. 0.5084 ± 0.29mg/dl, p_<0.001). IL-6 were more or less same to that of healthy control (7.625 ± 8.24 vs 7.776 ± 6.50 pg/ml), but in complicated cases IL-6 level was high in comparison to the control (11.160 ± 7.65 pg/ml vs 7.776 ± 6.50 pg/ml). In type I DM without any complication TNF-α was comparable to control but in complication mean value was non-significantly higher than control (14.11 ± 15.5pg/ml vs 8.275 ± 3.60 pg/ml). Contrary to this in complicated type II DM mean value of TNF-α was significantly higher than control (p_ 0.009).

Conclusion: Various inflammatory markers (IL-6, CRP, TNF-α) were found to be increased in type II DM (complicated and uncomplicated) this suggest that infection and inflammation was more common in type II DM as compared to type IDM. Low level of serum adiponectin in type II DM as compared to type I DM suggest that insulin resistance play role in type II DM.

Biography

Gyanendra Singh completed his MD Pathology from Institute of Medical Sciences, BHU, Varanasi India, which is one of the prestigious medical colleges in India. He also completed his three-year senior residency and one year fellowship. He completed his research in field of diabetes. He developed this approach based on his years of experience working in hospitals and educational institutions in research, evaluation, teaching, and administration.
ASSOCIATIONS OF COMBINED GENETIC AND ADHERENCE TO A HEALTHY LIFESTYLE RISK WITH INCIDENT TYPE 2 DIABETES

Maliha Sarfraz
The Women University Multan, Pakistan

Abstract

Type 2 diabetes (T2D) is emerging as one of the serious public health issues in both developed and developing counties. We aimed to investigate whether the impact of unhealthy lifestyle on type 2 diabetes risk is accentuated by genetic risk. We examined the joint association of genetic obesity, and unfavorable lifestyle with incident type 2 diabetes in a prospective study. The study sample included 500 individuals. We collected medical reports, lifestyle details, blood samples of individuals and used the polymerase chain reaction to genotype the SNP. Lifestyle was assessed by a lifestyle score composed of smoking, alcohol consumption, physical activity, and diet. Obesity (BMI ≥ 30 kg/m$^2$) and unfavorable lifestyle were associated with higher risk for incident type 2 diabetes regardless of genetic risks. The genotype of the additive of rs7903146, together with the history of hypertension, regular intake of meat and waist circumference, increased the risk of T2DM. The genotype of the additive and recessive models together with the degree of education, regular exercise, reduced the risk of T2DM. Conclusions of the study is having normal body weight is crucial in the prevention of type 2 diabetes, regardless of genetic risks. These results provide the theoretical basis for gene and other risk factors screening to prevent T2DM.

Biography

Maliha Sarfraz is from Punjab Pakistan. She attended the University of Agriculture Faisalabad on an academic scholarship for her doctoral degree and major was Animal Physiology. Always keen to learn & participate and very curious to try innovative practices. She keeps herself updated with every new tools & techniques. She is working as a reviewer of six well-reputed international journals and working as an editor in chief of one international journal. She is also an editorial board member of two international journals. Presently, she is a member of different societies. Her current research interests include metabolic syndrome, endocrine disruptors, endocrinology, and metabolism.
DETERMINATION OF PHYTOCHEMICAL CONSTITUENTS IN METHANOLIC EXTRACT OF CARALLUMA EDULIS

Umbreen Rashid¹,³, Maryum Jamshaid³, Zahid Ali Butt³, Mehmooda Munazir³ and Rahmatullah Qureshi²

¹Quaid-i-Azam University, Pakistan
²PMAS Arid Agriculture University, Pakistan
³GC Women University, Pakistan
⁴Abasyn University, Pakistan

Abstract

Introduction: Caralluma edulis is a food-cum-medicinal plant which belongs to the family Apocynaceae. The traditional healers recommend Caralluma edulis to cure hypertension, rheumatism, leprosy, diabetes, infections, gastric issues and Alzheimer disease. It has a great property to suppress appetite and can be used as an effective tool against fat buildup in the body.

Objectives: This study was aimed to investigate methanolic extract of C. edulis for its phytochemical constituents.

Methodology: Qualitative determination of phytochemical constituents (saponins, tannins, flavonoids, anthraquinones and phenols) in methanolic extract of C. edulis was performed using standard procedures.

Results: C. edulis contains saponins, tannins, flavonoids and anthraquinones except phenols.

Conclusion: The results of this study have shown the presence of diverse phytochemical constituents in the plant which justifies its effective use against various diseases. The presence of such compounds in C. edulis makes it propitious resource for the discovery of new drugs.
EFFECT OF KETOGENIC DIET ON CANCER: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

Adeleh Khodabakhshi  
Kerman University of Medical Sciences, Iran

Abstract

Background: In light of the mitochondrial metabolic theory, cancer could be considered a metabolic disease. It has been suggested that cancer metabolic therapies, including ketogenic diets (KD) may be useful to exploit differences in metabolism from non-neoplastic cells. In this systematic review and meta-analysis of randomized controlled trials (RCTs) we aimed to investigate the efficacy of KD as an adjuvant therapy in the treatment of cancer compared to a traditional non-ketogenic diet.

Methods: In this study, databases such as MEDLINE/PubMed, Web of Science, SCOPUS, EMBASE, and Cochrane Central Register of Controlled Trials were searched. Only RCTs that involved cancer participants that were assigned to dietary interventions including a KD group and a control group (any non-ketogenic dietary intervention) were selected. Two reviewers independently extracted the data, and the meta-analysis was performed using a fixed effects model or random effects model depending on the I2 value or p-value.

Results: This meta-analysis showed a significant reduction in weight (WMD = -3.58 kg; 95% CI: -6.24, -0.92; P = 0.008, BMI (WMD = -1.96 kg/m²; 95% CI: -2.83, -1.09; P < 0.001) and fat mass (WMD = -1.90; 95% CI: -3.57, -0.24; P = 0.025) with ketogenic diet. KD significantly decreased glucose (WMD = -9.52 mg/dl; 95% CI: -13.81, -5.23; P < 0.001) and IGF-1 (WMD = -16.27 ng/ml; 95% CI: -22.44, -10.09; P < 0.001). Furthermore, ketogenic diet induced ketosis by increasing β-hydroxybutyrate (WMD = 0.51 mmol/l; 95% CI: 0.11, 0.91; P = 0.012). There was a non-significant pooled effect of the ketogenic diet on insulin, C-reactive protein (CRP), lipid profile, kidney and liver function, and quality of life.

Conclusion: We found that KD might result in a greater reduction in glucose, IGF-1, ketosis, weight, BMI and fat mass in cancer patients compared to traditional non-ketogenic diets. According to our data, additional well-designed RCTs with larger sample sizes are needed to evaluate if KD can be routinely used as an adjuvant therapeutic component in cancer patients.

Biography

I am Dr Adeleh Khodabakhshi, PhD of clinical nutrition and faculty member of Kerman University of Medical Sciences.
A COMPARATIVE STUDY OF ALDOSE REDUCTASE IN NORMAL AND STREPTOZOTOCIN-INDUCED DIABETIC RATS TREATED WITH SYZYGIUM AROMATICUM: ILLUSTRATION OF INHIBITORY ACTIVITY

Imane Nait Irahal, Ismail Guenaou, Fatima Azzahra Lahlou, Fouzia Hmimid and Noureddine Bourhim

Université Hassan II de Casablanca, Morocco

Abstract

Background: Elevated blood glucose levels during diabetes often lead to complications: these can be microvascular, causing retinopathy, nephropathy, and neuropathy, or macrovascular, resulting in cerebrovascular disorders and coronary heart diseases. These complications arise during chronic hyperglycemia and the accompanying oxidative stress through the stimulation of the polyol pathway.

Objective: This study aimed to evaluate the antidiabetic properties of clove essential oil (CEO) and to elucidate its mode of action, using selected biochemical targets, relevant to diabetes, and, specifically, its inhibitory effect on the polyol pathway.

Methods: In the current study, CEO was examined for its inhibitory effects on aldose reductase \textit{in silico}, \textit{in vitro}, and \textit{in vivo}.

Results: In silico docking studies showed that all the selected major compounds of CEO have an energy change ranging between $-5.5$ and $-8.8$ kcal/mol and an inhibition constant ranging between 357.08 nM and 93.12 μM. CEO significantly inhibits aldose reductase with an IC50 value of 58.55 ± 5.84 μg/mL in a noncompetitive manner. The supplementation of CEO at 20 mg/kg BW decreases retinal sorbitol dehydrogenase activity via decreased aldose reductase activity in streptozotocin (STZ)-induced diabetic Sprague Dawley rats. Moreover, diabetic rats injected with CEO have exhibited improved levels of glycemia and weight loss.

Conclusion: CEO potentially exerts a beneficial effect on diabetes-related complications due to its inhibitory effect on aldose reductase activity.

Biography

The overarching goal of my research is to study new therapeutic targets for diabetic complications in type 1 diabetes (T1D). I focus mainly on clove essential oil (CEO) and we have showed successfully that CEO inhibited aldose reductase (AR) using in silico and in vitro studies. We complemented these observations by an in vivo study on streptozotocin-induced diabetic animals, enhancing data of the use of CEO in the management of diabetes, and providing first evidence for the development of a possible novel and safe ARL.
Abstract

Introduction: Breast cancer BCa ranks first among incident cancers in women. Vitamin D (VitD) deficiency, physical inactivity and obesity are considered risk factors for postmenopausal BCa.

Aim: Evaluate the impact of VitD and imposed physical exercise on mammary cancer progression, immune response of tumor in ovariectomized mice submitted to high fat diet HF.

Animals and methods: Ovariectomized 33 weeks-old mice C57BL/6 (n=50) were randomly assigned to 4 groups housed in enriched environment, submitted to high fat diet HF (4,5kcal/g) and supplemented or not with VitD (HFD, 12,25 vs 1,25 IU/g) for 12w. They were subjected or not to moderate imposed exercise (HFE; HFDE) at 12 m/min (45 min) on treadmill. Body weight and food intake were checked once and twice a week, respectively. Daily spontaneous activity SPA, maximal aerobic speed MAS and forelimb grip strength GS were measured. At w8, syngeneic mammary tumor cells E0771 were orthotopically injected into the mammary glands. Mice were killed when tumor volume was around 2 cm³. Tumor immune infiltrate was explored by FACS. Treated results with 2-ways ANOVA+Teukey post-test are expressed as mean±SD, p<0.05.

Results: Before tumor cell injection, exercise (p=0.01) and VitD (p=0.05) reduced body weight gain. Exercise decreased total and visceral fat mass (p=0.03). SPA (p<0.0001) and GS (p=0.01) were more important in HFDE mice than others. MAS was unchanged between the groups.

After cell injection, VitD prolonged mice survival (p=0.05), this effect is enhanced by exercise. In tumor, the leukocyte infiltrate populations were similar for all groups. VitD supplementation significantly decreased the proportion of NK, Th1 and Treg cells (P<0.05) and Ex alone increased that of NK cells (P<0.05).

Conclusion: In our experiment, VitD supplementation reduced weight gain and prolonged mice survival. It seems to promote tolerogenic environment. Imposed exercise reduced body weight. Although exercise did not reduce tumor growth, an increase in the proportion of NK is found in tumors suggesting the initiation of an anti-tumor immune state.

Biography

Sahar Aldekwer is a post-doctoral researcher at the University of Grenoble Alpes, where she studies the link between adipose tissue dysfunctions and cardiac remodeling in case of intermittent hypoxia resulting from obstructive sleep apnea syndrome. She graduated from the Lebanese University with Master’s degree in Nutrition. She continued her doctoral studies at Clermont Auvergne University where she characterized the immunomodulatory and anti proliferative effects of vitamin D in an in vitro and in vivo model of breast adenocarcinoma.
ASSESSMENT OF THE KNOWLEDGE ON INSULIN THERAPY AMONG ADULT DIABETICS PATIENTS IN JABIR ABULEIZ CENTER, KHARTOUM, SUDAN

Rania Osman1, Osman Amir2

1Jazan University, Saudi Arabia,
2Al-Neelain University, Sudan

Abstract

Background: D.M is considered the leading cause of death in most developing nations. This might be endorsed to poorly controlled hyperglycemia, which is correlated with several life-threatening complications. Best glycemic control can be only accomplished when the patients are adherent to self-management behaviors like a healthy diet, physical activity, monitoring of blood glucose, taking medications appropriately, ability to resolve diabetes problems, and healthy coping.

Objective: To assess the knowledge and practice concerning insulin therapy in adult diabetic Sudanese patients and relate it with their control of diabetes and selected demographic variables.

Methods: Personal interview, using a specific pretested designed questionnaire was used to collect data from 200 adult diabetic patients in Jabir Abuleiz center in Khartoum state.

Results: The result showed that only 15% of the respondent had adequate knowledge about insulin use. Also, good knowledge was associated with a higher level of education and good glycemic control (P < 0.001).

Conclusion: Knowledge about insulin therapy has an important role in the control of diabetes mellitus. Those who are knowledgeable about insulin therapy are more likely to have good control of HbA1c.

Biography

Dr. Rania Farah has a long experience in both clinical and academic fields. She owns a membership of the royal college of Physicians of Ireland, MRCP Glasgow and a master degree in clinical pharmacology. Working in internal medicine and teaching made her to grasp a solid base of knowledge and practice that enabled her to present herself as a one of the prominent health professionals in her working stations. She stepped up in research area and looking for better place over there.
Day-2

Poster Presentations
MICROENCAPSULATION OF EXTRA VIRGIN OLIVE OIL BY SPRAY-DRYING: EFFECT OF WALL MATERIALS COMPOSITION

Donia Chaabane, Asma Yakdhane, Arijit Nath, Gyula Vatai, Krisztina Albert and András Koris

Hungarian University of Agriculture and Life Sciences Budapest, Hungary

Abstract

Background: Because of its high instauration degree, olive oil is subject to oxidation during processing, distribution, and handling. Thus, microencapsulation presents an alternative to protect the unsaturated fatty acids against oxidation. It has been used by many researchers to retard or avoid the oxidation of olive oil.

Objective: The objective of the work was to investigate the microencapsulation of extra virgin olive oil by spray drying to increase its stability and application area.

Methods: The homogenization method used in this study for emulsion preparation was the rotor–stator homogenization (RSH). The effect of wall materials composition was examined on physical properties of feed emulsion and Microencapsulated Extra Virgin Olive Oil Powder (MEVOP). Maltodextrin DE 19 (MD) and Whey Protein Isolate (WPI) were used as wall materials. Microencapsulation was carried out by a laboratory-scale spray drier. Five wall systems were tested consisting of WPI alone, MD alone and three different combinations of them.

Results: First, the quality of emulsion was discussed by determining viscosities of the samples, droplet size and emulsion stability. Then, the quality of microcapsules obtained was evaluated by determining Encapsulation Efficiency (EE), particle size distributions, moisture content and solubility.

Conclusion: The maximum EE was 88.61 ± 1.64. The optimum wall material composition for this process is when the amounts of MD and WPI are equal.

Biography

Donia Chaabane is currently Ph.D. student in Food engineering in Faculty of Food Science at Hungarian University of Agriculture and Life Sciences Budapest, Hungary. She is an enthusiastic, adaptive, and fast-learning person with a broad and acute interest in the research and development of new food products. She particularly enjoys collaborating with scientists, researchers, and engineers from different disciplines to develop theoretical knowledge, new skills in research, and solve up-to-date challenges in the food industry. Through her studies, she became very interested in food science and technology and acquired many theoretical and methodological tools in this field. Research interests include functional foods, microencapsulation and membrane emulsification
PESTICIDE RESIDUE LEVELS OF STORED MAIZE GRAIN FOR POSSIBLE USE AS A NUTRITION OR INDUSTRIAL SUPPLEMENT

Daniel Amoako Darko¹, Basia Sumani Hajua¹, Samuel Senyo Koranteng¹, Paul Osei Fosu² and Richard Minkah¹

¹University of Ghana, Ghana
²Ghana Standards Authority, Ghana

Abstract

Nutraceuticals and food ingredients, many of which are believed to contain substances with certain health functionalities are thought to have lower rate of adverse effects relative to conventional drugs and other pharmaceutical formulations. The higher costs of many conventional medications and traditional pharmaceutical formulations also make the use of nutraceuticals and dietary supplements or food ingredients more attractive. Many of these dietary supplements and nutraceuticals are present as very small concentrations in foods and have no immediate health functions when the food is consumed. The long-term intake of these substances in foods however, may result in some health benefits or help to prevent the onset of certain illness. Ironically, toxic contamination of nutraceuticals and food supplements/ ingredients during any stage of production may lead to changes in their quality and safety as food products. Additionally, the consumption of contaminated nutraceutical and food supplements/ or ingredients by vulnerable groups of the population may become a serious problem if the tolerable level of exposure is exceeded. It is therefore very important to preserve the integrity of nutraceutical and food supplements by preventing or limiting the level of contamination from environmental pollutants as much as possible. Although a lot of cereal and other grain products are used as supplements in the food and brewery industry in Ghana, not much information is available on the levels of toxic contaminants especially, at the farm gate level. A study was therefore conducted to determine the levels of pesticide residues in stored maize grain of some farmers within the Sisala East municipality of the Upper West Region of Ghana. Maize grain samples were obtained from 194 farmers randomly selected in a completely randomized design and the samples analysed using a modified version of the Quick, Easy, Cheap, Effective, Rugged and Safe (QuEChERS) method for levels of some commonly used pesticides in the area. Results obtained from the pesticide residue analysis of the maize grain samples were statistically analysed and compared to the World Health Organization standards for Maximum Residue level (WHO MRLs) for food substances using ANOVA. The results showed that levels of Bifenthrin and Fenvalerate obtained in the samples of maize grain were above the World Health Organization Maximum Residue level (WHO MRLs) of 0.05mg/kg and 0.02mg/kg respectively. This indicates that maize grains obtained from some of the farms were contaminated and could be harmful when consumed or used as nutraceutical and food ingredient.

Biography

Donia Chaabane is currently PhD. student in Food engineering in Faculty of Food Science at Hungarian University of Agriculture and Life Sciences Budapest, Hungary. She is an enthusiastic, adaptive, and fast-learning person with a broad and acute interest in the research and development of new food products. She particularly enjoys collaborating with scientists, researchers, and engineers from different disciplines to develop theoretical knowledge, new skills in research, and solve up-to-date challenges in the food industry. Through her studies, she became very interested in food science and technology and acquired many theoretical and methodological tools in this field. Research interests include functional foods, microencapsulation and membrane emulsification.
EPIDEMIOLOGICAL FEATURES OF TYPE 1 DIABETIC PATIENTS IN NABLUS AND RAMALLAH, WEST BANK: A CROSS SECTIONAL STUDY, 2020

Souad Belkebir¹, Lubna Alsaudi², Joumana Sweedan³, Yazan Abueideh⁴, Ibrahim Fadila⁵ and Massa Qassem⁶

An Najah National University, Palestine

Abstract

**Background:** T1DM is a significant chronic illness affecting children and young people globally, especially in low and middle income nations. In 2021, 4.4 percent of the Palestinian diabetic population would have T1DM, and few studies have focused on this group. The aim of this study is to picture the clinical and epidemiological features of T1DM attending Diabetic clinics in the North of Palestine.

**Methods:** A cross-sectional descriptive study was conducted in diabetic centers in both Nablus and Ramallah cities among DM type I aged 18 years old or above from November 2020 to May 2021. Clinical and Epidemiological features were collected by reviewing medical files while missing data was completed by phone calls. We used the IBM SPSS Statistics for Windows, Version 20.0 (IBM Corp., Armonk, NY: IBM Corp) for statistical analyses. Frequencies and percentages and mean ± standard deviation (SD) to describe participants’ characteristics and clinical and epidemiological data were reported. Univariate analysis using Pearson Chi² test (or Fisher exact test when appropriate) or independent t-test were used to evaluate the relation between the different independent variables and the diabetes control status (controlled versus uncontrolled). A p value less than 5% was set as a level of significance.

**Results:** Of the 258 patients, 136 (52.7%) were females. The mean age (SD) was 27.62 (7.590). 147 (59.8%) hold a university degree, 157 (63.1%) of participants were unemployed and 164 (64.9%) were unmarried. 123 (68.1%) had never smoked and only 35 (20%) reported being physically inactive. 196 (71.7%) of our patients showed a positive family history of DM. The mean (SD) of BMI was 23.218 ± 3.447 and (60.9%) had normal weight. The mean (SD) HbA1C was (9.6912 ±2.309). 206 (79.5%) had uncontrolled diabetes (HbA1C <7.5). 179 (97%) depend only on insulin injections without using oral agents with a mean duration of treatment (mean, SD) of 10.29 ± 8.768 and being the Glucocheck the conventional method used by patients to monitor their blood glucose level (70.2%). 224 (87.8%) had no complications, while (11%) had retinopathy. The bivariate analysis showed a statistically significant association between diabetic control and educational level in favor of high educational level (p value = 0.013).

**Conclusion:** This is the first research to describe T1DM patients’ characteristics in North of Palestine showing that our patients are mostly females with a high educational level and a positive family history of disease but no partner in life, job, or any inclination toward smoking Low educational levels increase the risk of having uncontrolled diabetes, so efforts must be made to raise the level of education. Better documentation of diabetes data is needed to improve the lack of research in this subject area in Palestine.

**Biography**

Souad Belkebir, MD. Master of Public Health. Spanish board in Preventive Medicine and Public Health. Currently, she is working as an Assistant Professor in the Department of Family and Community Medicine, Faculty of Medicine, An-Najah National University. Coordinator of the Master’s Program in Infectious Diseases Prevention and Control at An-Najah University. Head of the Preventive Medicine Department at An-Najah National Hospital and Chairman of the Infection Control Committee (2015-2020). Areas of interest and research: public health, research methods, hospital epidemiology, NCDs, women’s health, health economics, health programs, medical ethics, medical education.
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