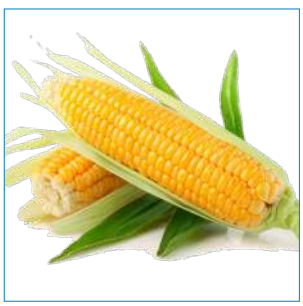
Accepted Abstracts

Food Technology 2022




10th International Conference on

Food Science & Technology

February 07, 2022 | Webinar

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Malnutrition, Body Mass Index and N-terminal pro-Brain Natriuretic Peptide in hemodialysis patients

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Uremic malnutrition also called protein energy wasting (PEW), is a common problem in patients with end stage renal disease undergoing hemodialysis (HD). This syndrome has been associated with, morbidity and mortality. Association between malnutrition and N-terminal pro-brain natriuretic peptide (NT-proBNP), a predictive factor of cardiac events and mortality has been reported. In addition, inverse relationships between body mass index (BMI) and circulating levels of NT-proBNP have been demonstrated.

We evaluated the association between NT-proBNP, BMI and malnutrition in a sample of Afro-Caribbean HD patients. Malnutrition was identified according to the International (ISRMN) definition and one component in each of the 4 categories of the wasting syndrome were retained: serum albumin ≤ 38 g/L, BMI ≤ 23 Kg/m2, creatininemia ≤ 818 µmol/L/m2 and nPCR≤ 0.8 g/kg/day. NT-ProBNP was assessed using a chimiluminescence immunoassay, at the start of dialysis. In 207 patients (mean age: 64 years +/-13), NT-ProBNP ranged from 125 to 33 144 pg/ mL.

The major comorbidities were hypertension (90%), diabetes (41.5%), obesity (26.5%) and PEW (at least three components) was found in 16.9%. Log NT-ProBNP was negatively correlated with BMI (r = - 0.19, P = 0.005) and also with left ventricular ejection fraction.

Patients with high NT-ProBNP levels (≥ 6243 pg/mL) had higher frequencies of malnutrition (≥3 factors) (34.6 % vs 11.0 % in those with NT-ProBNP levels < 6243 pg/mL; P < 0.001), including BMI ≤ 23 Kg/m2 (55.8 % vs 29.0 %; P < 0.001) and mean BMI was 23.8 ± 5.2 vs 26.9 ± 6.9 Kg/m2 ; P = 0.004.

In HD patients, several parameters could be involved in the association between NT-proBNP and malnutrition, including inflammation and inadequate protein and caloric intake, that could lead to low BMI. NT-proBNP levels must draw attention to cardiac function but also to nutritional status.

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Determination of heavy metal residual levels in bottled natural mineral waters sold in Istanbul, Turkey

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Water is a vital food material for humans and other living things to survive. Recent developments in various industrial sectors, urbanization and the spread of agriculture based on modern techniques have resulted in increased contamination of water with heavy metals and microbial agents. This study was conducted to investigate the concentrations of selected heavy metals in bottled spring waters sold in Istanbul, Turkey markets. For this purpose, 200 bottled natural mineral waters were collected and analyzed for the residual quantities of Pb, As, Hg, Cd, and Cu using ICP-MS technique.

The concentrations of Pb, As and Cu were higher to the limit values of the regulations in 72 (36%) of natural mineral waters, while the average amounts of positive samples were determined as 3.01, 4.77, 0.72, 0.01 and 2.49 µg/L for Pb, As, Hg, Cd and Cu, respectively in all analyzed samples. As a result, it is important to carry out routine control of waters on the basis of welding, filling units and filling containers. The existence of heavy metals in the environment is a serious risk for water quality due to their high toxicity to plant, animal and human life. Thus, it is obviously important to follow out the monitoring of heavy metals in water samples and to take preventive measures to prohibit environmental pollution by heavy metals' contamination in order to protect the public health. Moreover, better hygienic practices in the water industry such as controlling water quality, improving hygienic filling system, sanitizing sufficiently running water, using of non-returnable plastic containers and providing routine training for the relevant staff could be prohibited the risks of heavy metals' contamination.

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Chronic Disease and Homeopathy

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Chronic diseases are health conditions that are long lasting and can often only be controlled but never cured. Genetics indicate the weaknesses in our body system and areas of susceptibility, while factors such as lifestyle, age, and gender are contributing factors in determining how soon we might be affected. Just in United States, 45% of the populations suffer from at least one chronic condition. After the age of 55, these numbers skyrocket to 80% of population having at least one chronic condition and 50% with two or more. Heart disease, cancer, stroke, diabetes, arthritis, asthma, depression, hormonal troubles are a few of these chronic conditions that may severely impact the lives of many people. The plague of the 21st century has become deaths due to chronic diseases; 70% of deaths in United States are attributed to chronic conditions.

Treatment of chronic diseases is a complex and costly problem with no light at the end of the tunnel. The main treatment today is heavy-duty medications to control the condition and surgery when warranted. The unpleasant side effects of most of these medications, coupled with the fact that they don't cure, leads to a large percent of people who skip doses or entirely stop their medications. Most of these medications work on suppressing the problem or cutting away the diseased part in surgery. Homeopathy on the other hand treats the individual holistically and believes the body is intrinsically healthy and capable of healing itself. Genetic weakness combined with lifestyle choices propel the body towards derangement. Instead of suppressing the problem, homeopathy which is the only medicine in the world to work at a sub-physiological dose, stimulates the body's self-healing mechanism to repair itself.

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Antimicrobial and immune modulating metabolites from Lactic Acid Bacteria

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Lactic acid bacteria (LAB) are an underexplored source of nutraceuticals. Among these, almost every class of biochemical compounds are synthesized, the best known being exopolysaccharides (EPS), short-chain fatty acids (SCFA), conjugated linoleic acids (CLA), amino acid derivatives, bacteriocins, antimicrobial and immune regulating peptides, selenoproteins and moonlight proteins.

Recently, probiotic-derived nutraceutical compounds have been classified as post-biotics and para-biotics. Post-biotics are all the molecules that are released into the external environment, such as bacteriocins, acids, hormones, peptides, whereas para-biotics (exopolysaccharides, moonlighting proteins) are molecules exposed on the cell surface that can induce an immune response.

As far as infections are concerned, probiotic LAB can decrypt antimicrobial peptides (AMP) and immune stimulating peptides from diet- derived proteins thus indirectly controlling microbial and viral populations at the gut level. Furthermore, L.reuteri can synthesize a non-canonical bacteriocin called Reuterin, which exerts its antimicrobial activity both by inducing oxidative stress in the target cells and by conversion into the toxic compound acrolein, thus displaying a spectrum of activity extended to fungi and viruses. EPS can contribute to control infection since they display immune-stimulating properties due both to their binding to toll-like receptors (TLR) on immune cells and to their prebiotic activity, promoting gut microbiota growth and diversity and, therefore, indirect immune activation. An additional immune-modulating effect is exerted by LAB-secreted selenoproteins and GABA. The production of the latter can be enhanced by supplying the precursor amino acid glutamate. Finally, several secreted moonlight proteins induced by growth in particular conditions (i.e. abundance of 5HT) can contribute to stimulate immunity and anti-infective responses.

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Supplementation with Glutamine Enhances the Effects of Low FODMAP Diet in Management of Irritable Bowel Syndrome

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Background: Although irritable bowel syndrome (IBS) is one of the most common gastrointestinal disorders presenting to gastroenterologists, therapeutic strategies have not yet well established. Accordingly, we conducted a randomized, double-blind, placebo controlled, clinical trial to evaluate the possible superiority adding glutamine supplement to low fermentable oligo- di- monosaccharides and polyols (FODMAP) diet in patients with IBS

Methods: Eligible adults were randomized to receive low FODMAP diet either with glutamine (15 gram/day) or placebo r 6 weeks. The primary end point was a reduction of ≥50% on the IBS Severity Scoring System (IBS-SSS). Secondary endpoints were changes in IBS symptoms and quality of life.

Results: Fifty patients were enrolled in the study, while 22 participants completed the study protocol in each group. The glutamine group had significant changes in total IBS-severity score, dissatisfaction of bowel habit and interference with community function (58% reduction; p<0.001, 57% reduction; P <0.001, 51% reduction; p=.043, respectively). Improvement in IBS-severity score of more than 50% was observed in 18 of 22 participants (82%) in glutamine group, while it was only in 6 of 22 participants (27%) in control group. No serious adverse events were observed.

Conclusions: Our findings indicate the superiority of adding glutamine supplementation to low FODMAP diet in amelioration of IBS symptoms, while confirming the beneficial effects of low FODMAP diet in IBS management..

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