

17th World Congress on

Oral Care and Probiotics

November 14-16, 2016 Orlando, USA

e-Posters



Oral care and Probiotics-2016

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Surgical versus non-surgical periodontal therapy in reduction of periodontal pockets (5-8 mm depth)

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Introduction: Periodontal disease is a major problem affecting the human dentition. Early diagnosis and evaluation of the results of periodontal therapy is important in controlling the disease. The purpose of this randomized spilt mouth clinical trial was designed to compare the effectiveness of non-surgical periodontal therapy through plaque control, scaling and root planing with the surgical one using modified Widman's flap, in reduction of periodontal pockets 5-8 mm in depth.

Materials & Methods: Study populations consisting of 17 patients with advanced periodontal diseases were recruited from patients seeking treatment at Khartoum University Faculty of Dentistry Periodontic Clinic. No sex predilection, age range 35-45 years, without systemic diseases and did not use antibiotics in the previous 3 months. Then full mouth scaling, polishing and root planing with manual scalars were applied to all patients. After 7 days the modified Widman's flap procedure applied to one sextant which was randomly selected. Periodontal parameters measurements were taken again at days 28, 56 and 84th.

Results: For both surgical and non-surgical treated sites, the mean and standard deviations of periodontal parameters, plaque index (PLI), gingival index (GI), probable pocket depth (PPD) and gingival recession showed significant reduction except for the gingival recession which showed increment at the surgically treated sites.

Conclusions: Both surgical therapy using modified Widman's flap and non-surgical treatment by scaling and root planing are equally effective in the reduction of periodontal pockets (5-8 mm) depth.

Biography

Amel I. Faragalla BDS, has completed her masters completed from Khartoum University, MFD.RCSI Ireland. Presently She is working as a associate professor Department of Periodontics, Faculty of Dentistry, King Khalid University, Saudia Arabia

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Dental caries prevalence and children's access to dental care in Moldova

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Objective: To assess dental caries prevalence, need for dental treatment and children's access to dental care in the Republic of Moldova.

Materials & Methods: The sample included two groups of 4673 children, randomly selected, aged 1-18, who were clinically examined within the cross-sectional study conducted between 2014 and 2015: 2315 (49.54%) children from the countryside (L1) and 2358 (50.46%) from urban areas (L0). There were estimated indices of dental caries prevalence (IP), caries experience and restoration index (RI). The written consent of children's parents was taken for the study. SPSS vs.16.0 was used for descriptive and inferential analysis, using both parametric and non-parametric tests.

Results: Significant differences were observed between the extent of caries impairment in subjects from the countryside compared to children from urban areas; dental caries being present in 79.40±0.84% children from the countryside compared to 56.49±1.02% children ($t=17.32$; $p<0.001$) from urban areas. The mean values of DMFT index in L1 and L0 groups constituted 3.9±0.07 and 1.62±0.04 ($t=13.14$; $p<0.001$), respectively. The mean RI value of temporary teeth in children from rural areas was only 7.97±1.02%, while in permanent teeth it was 13.6±2.42%, unlike RI index values of deciduous teeth 39.3±2, 12% and 84.64±14.22% in permanent teeth in children from urban areas ($p<0.001$).

Conclusions: The high level of dental caries morbidity, low RI value and a large number of extracted teeth due to caries complications in children from the countryside show an increased prevalence of need in dental treatment and insufficient dental care provided to this population.

Biography

Aurelia Spinei has completed her PhD (in 2001) and Post-doctoral studies (in 2013) from Nicolae Testemitanu State University of Medicine and Pharmacy, Republic of Moldova.

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The aim of this study was to evaluate the effect of dental education in primary school children on dental needs.

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Methods: Dental needs of first grade primary school children were evaluated by a pediatric dentistry resident using a dental mirror and a head light. A dental hygienist visited each class twice and described the factors affecting dental caries and the effective ways to minimize carious attacks. At the beginning of the next academic year the same children were evaluated again.

Results: Over 1600 children were examined in 15 schools. Out of the 15 schools examined, in 8 (53%) a significant reduction of the dental needs was observed. In the remaining 7 schools, the dental needs were similar to the previous year.

Conclusion: In Israel, from 2009, dental treatment for children up to 8 years is free. The results showed that presentations given by a dental hygienist improved dental awareness and following that, the dental needs of the children were significantly reduced after one year.

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The important of human milk banking for infant nutrition

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Milk contains the necessary components for the development of newborn. Breastfed contain many components that will positively affect the infant's growth and also development compared to other types of milk. Therefore, exclusive breastfeeding in the first 6 months of life, and the next 18 months to continue breastfeeding with supplementary feeding is important for the infant's physical and psychological health. At the same time, it reduces the cost of hospital during the infant's life, incidence of Nekrotizan Enterokolit and late-onset of sepsis and improves the infant's gut microflora. Children who benefit regularly own mother's attention and affection, will have a chance consistent and balanced personality development later in life. The infant's own mother's milk should always be the first option and supplies to be supportive efforts to continue lactation is very important. If the mother's milk is not available or mother cannot provide infant milk due to various reasons, donor breast milk from established breast milk bank is the preferable option. Breast milk bank can be used as tool to reach breast milk which is gold standard, for yet underdeveloped digestive system and immune barrier with a newborn baby. Breast milk bank stands out as the first choice for newborns, but this comes with various risks. In order to minimize these risks, guidelines has been demonstrated that certain procedures should be followed. The procedures were cause loss of various milk components and also vary from culture to culture. In Turkey, human milk banks have been established in various cities as appropriate people belief. More researches and activities needs to be organized to use human milk bank worldwide, especially in the undeveloped country.

Biography

Gul Ogren has completed her Bachelor of Nutrition and Dietetic from Erciyes University. She is currently pursuing her Master's Program at the Department of Nutrition and Dietetic, Marmara University. She was a Research Assistant at Marmara University, Turkey.

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Accepted Abstracts



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Perceived connections between oral health and stress among pregnant women: A study in Saudi Arabia

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Background: Although stress during pregnancy has negative effects on children's development and pregnant women's health, no study has assessed stress and its predictors among pregnant Saudi women.

Aim: The aim of this study was to assess the relationship between sociodemographic and self-reported oral health problems and perceived stress in a sample of pregnant Saudi women.

Materials & Methods: A cross-sectional study was carried out at King Abdulaziz Medical City in Riyadh, Saudi Arabia, on 438 pregnant women who attended the obstetrics/gynecology clinic. We collected data on their sociodemographic and oral health status. Stress was assessed using the perceived stress scale.

Results: 33.4% of the sample reported high stress. The study revealed significantly high stress in women with no or low income, chronic disease, sleep deprivation, no teeth brushing, irregular eating patterns, gestational diabetes and no family support ($P < 0.05$). Self-reported oral health problems were significantly associated with high stress ($P < 0.05$). A multiple linear regression model shows no teeth brushing; chronic disease, sleep deprivation, gestational diabetes and gingival redness predicted an increase in stress by (3.6, 2.4, 2.1, 1.4 and 1.4, respectively).

Conclusions: It was estimated that 3 in 10 pregnant women in our hospital reported high stress levels. Our study shed light on the relationship between healthy habits, oral health status, and perceived stress in pregnant women. This research may help healthcare practitioners who provide care to pregnant women to educate them in regard to healthy habits and to develop a program to reduce stress.

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The use of tads (temporary anchorage devices) in lingual orthodontics

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In recent years, there has been a dramatic increase in the number of adults receiving comprehensive orthodontic treatment. In clinical practice, management of adults may be somewhat different than for most adolescents. Adults are more likely than adolescents to have dentitions that have undergone some degree of mutilation over time, which may necessitate alterations in the treatment strategy. Excessive wear, missing and compromised teeth are some of the differences observed. For adult patients who have experienced bone and attachment loss as a consequence of periodontal disease, new biomechanical options and temporary bone anchorage devices can be employed for producing the tooth movements desired during the orthodontic therapy. In this presentation, current clinical application of Temporary Anchorage Devices (TADs) in Lingual orthodontics will be presented, with emphasis on clinical orthodontic management of severely mutilated dentitions. After an introduction and biological background on different types of TADs, the Author will describe the use of miniscrews for lingual orthodontic patients, the best anatomical sites depending on the desired biomechanical planning. Various clinical examples will be shown to describe the step by step procedure for insertion and loading. Lingual Orthodontics nowadays can surely benefit from TADs for reinforcing the anchorage, especially in adults with compromised dentitions and periodontium.

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Effects of dental bleaching on oral health: A new study

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Background & Purpose: Alteration on enamel surface structure due to bleaching procedure is a concern that could affect plaque accumulation on tooth surface. Nowadays treatment of tooth discoloration is a common esthetic demand in population. The aim of this study was to evaluate the clinical effect of white strips containing 9.5% hydrogen peroxide on the plaque index of dental student.

Materials & Methods: This clinical trial study was done on 17 dental students aged 20-24 years old. All subjects signed a consent form before participating in the study. The protocol was approved by the ethical committee of Azad Dental University. Plaque index was recorded 10 day, 3 day and base line per treatment. The white strip crest advanced vivid, USA were used on sex anterior maxillary teeth based on manufacturer's instructions 14 days, each day 30 minutes. Plaque index was recorded on day 14 of treatment, 3 and 10 day post-treatment. The data was analyzed performed with Friedman test.

Results: Turesky plaque index was significant lower immediately after treatment and 10 day post-treatment compared to 10 day per treatment and base line. ($p < 0/05$)

Conclusion: White strips containing 9.5% hydrogen peroxide can decrease plaque accumulation for a short period of time after bleach treatment.

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Periodontal muscle training can strengthen the periodontal support: Feet your teeth

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Previous research on periodontal structure and function has shown a significant relationship between periodontal tissue and teeth. This study assessed dentist's beliefs about the relative efficacy of the health of periodontal tissue. A total of 505 patients in general practice were asked to respond to a list of 25 obligatory nourishment for a child while going to have the first teeth, for its effectiveness in dealing with patient's periodontal health especially including chewing hard food. They were also asked to select the three most effective nutrition types for periodontal tissue. The indices of patient perceived importance of the periodontal health were derived and each was compared with actual effectiveness as determined from a sample of 250 patients. Although the majority of patient's rated (18 of 25) nutrition as being very effective, there was no significant association between patients perceived nourishment effectiveness and actual effectiveness. The implications for patient training are discussed.

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Gateway to the future laser dentistry: Facts and applications

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Laser technology has been successfully incorporated in many fields of modern dentistry during the last decade. As a new tool in dental practice, laser technology has positively expanded the scope of attractive, painless dental procedures and effectively found its way into the mainstream of dentistry. Yet, its clinical performance and procedural limitation represent one of the most controversial topics of recent dental literatures and conferences discussions. This presentation will review the scientific concept of photo-ablation theory and its application in dental field. Moreover, it will discuss the laser tools and delivery modes as well as the safety measures required for using this technology in different dental setups. This presentation will also review the use of laser in the various disciplines of dentistry and discuss which specific lasers should be used for each of those disciplines. Finally, the presentation will review criteria that will help dentists to select the right laser for their practice. This presentation will achieve the following objectives: General overview of the basic concept of laser application in modern dentistry; demonstrate the biological rationale for the use of laser in dentistry; identify the types of laser-tissue interaction; differentiate available laser wavelengths used in dentistry and identify the specification of each wavelength; and identify the most important laser applications in dental practice including the recommended techniques, advantages, disadvantages and limitations.

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Oral health provides a path to improved healthcare and reduced cost

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Many aspects of primary care are failing, which has increased the burden on chronic care. Primary care could mitigate these failures by capturing pertinent information about how consumers manage their oral health over time. The behaviors, habits and lifestyle choices that impact oral health are also risk factors for common chronic diseases such as diabetes, cardiac problems and obesity. This oral health information could be used by primary care as an early alert signal of issues with long-term health and quality of life. As a consumer behaviors, habits and lifestyle choices are very significant to their health journey, a logical first step is to enable consumers to become competent health managers. This web solution will also bring the patient's oral profile to their primary care provider and demonstrate oral health measures to payers. These benefits will establish benefit of oral health to systemic health and beyond. These insights indicate that a patient's oral health profile could significantly benefit primary and chronic care management. I call this oral health profile, comprised of the patient's information confirmed by the outcomes of their dental examination, Smart Data. Smart data can provide benefits to improve population health and reduce disparities and inequities for consumers and improve collaboration across healthcare.

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Augmentation of severely resorbed maxilla-mandibular alveolar ridges for implant rehabilitations

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Loss of teeth results in resorption of the alveolar process and, in more advanced stages, resorption of the underlying basal bone. A severely resorbed maxilla and mandible generally results in problems for the prosthesis, such as insufficient retention, pain by overloading the mucosa, impaired masticatory function, speech difficulties, loss of soft tissue support, altered facial appearance and psychosocial problems. Reconstruction of a moderated resorbed maxilla and/or mandibular alveolar ridges to restore oral function does not remain as a surgical and prosthetic challenge due to the possibility to easily restore the minimal amount of residual bone support with conventional sinus lift, onlay grafts or even with zygomatic implants. On the other hand, when the maxillary ridges present with anatomical changes or severely resorbed it still be critical to place implants without considering great bone reconstructions. The purpose of this presentation is to report a case series of patients with severely resorbed maxilla and mandible. These cases were treated lifting and grafting the areas using a mixed graft of BMP and bovine demineralized bone and mash, as an option of uses of zygomatic implants or positional/onlay autogenously bone grafts.

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One-year follow-up of implant supported fixed partial denture on a patient with oligodontia

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Oligodontia is defined as the absence of 6 or more permanent teeth due to the hypo-development of tooth germs. Patients with oligodontia may have unpleasant appearance, impaired mastication and speech difficulties. Dental prosthetic treatments, including implants, removable prostheses, fixed dentures and adhesive techniques have been proven effective in the management of these patients. The use of osseointegrated implants to aid in restoring missing teeth has become the treatment of first choice, especially for adult patients. In the present case report, the patient was 30 years old man with oligodontia. This patient complained of esthetic dissatisfaction because of congenital missing teeth. Considering prosthetics, he had insufficient anterior prosthetic space because of severe wear on occlusal surface of posterior teeth as the growth process was completed. The osseointegrated dental implant can be used successfully in partially edentulous arches affected by congenital missing. Considering economic concern, we decided on keeping mandibular prosthesis. After diagnostic wax-up was made and analyzed, the vertical dimension of 3 mm from the central incisor was decided to raise for esthetic and functional rehabilitation and to have the adaptation period with maxillary provisional prosthesis. During 3 months of observation period, occlusal stability and TMJ were periodically checked and it was confirmed that the patient has no pathologic sign and symptoms. Internal-type implants (Osstem, Seoul, Korea) were placed at the sites of both maxillary first premolar, both maxillary central incisor with ridge split technique and ramal bone graft following the delayed loading procedure. Maxillary posterior teeth was to be restored with monolithic zirconia fixed partial denture, anterior missing area were restored with porcelain-fused zirconia implant prosthesis using CAD/CAM technique. The prostheses were designed using mutually protected occlusion. Oral hygiene instruction and regular check-up were administrated.

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Is implant flossing a possible risk for the development of peri-implant disease?

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Both in animal experiments and clinical studies, it was established that biofilm deposition on the implant surface was the important etiologic factor for the initiation and the maintenance of peri-implant inflammation and possibly subsequent loss of marginal bone. Prevention of peri-implant infections is therefore of utmost importance for long-term dental implant survival. Maintaining a high standard of oral hygiene is consequently very important for an optimal longevity of oral implants. In that context, cleansing of implants using interproximal cleansing devices is a necessity. A frequently recommended oral hygiene aid is dental floss or superfloss. However, the unrestricted use of these oral hygiene devices in regions with exposed roughened implant surfaces has to be questioned, as new evidences show that pieces of the floss may become trapped in the peri-implant sulcus. The purpose of this communication is to present the possible risks of dental floss encountered with either already existing peri-implantitis lesions or possible connection discrepancies between fixture and abutment. A prime example with diagnosis, treatment and 6 years follow up will be presented by mean of pictures, endoscopic clips, radiographs, recordings and electron microscope examinations.

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Effect of fructans with different degree of polymerization and structure on growth of selected probiotic strains and formation of short chain fatty acids

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Fructans are well known prebiotics which are accumulated by a great variety of plants. The influence of structure and polymerization degree (dp) on the prebiotic potential is not fully elucidated yet. Thus, we compared the growth of selected probiotic strains and their formation of short chain fatty acids (SCFAs) with fructans from different sources related to diverse structures such as un-branched inulin-type (only β 2-1 linkages), mixed-type (combined β 2-1 and β 2-6 linkages with branching) and levans (β 2-6 linkages) with branching. Fructans from chicory or agaves were separated into fractions of different dp using size exclusion chromatography and tested for their influence on the growth enhancement of selected probiotic strains. Furthermore, the degradation of fructooligosaccharides by probiotics and the formation of short chain fatty acids (SCFAs) were studied. Fructan samples with lower polymerization degree and branching induced the growth of the probiotics faster than those with higher polymerization degree. The correlation between growth induction and polymerization degree was strain dependent. The degradation process of the fructooligosaccharides by probiotics correlated well with the growth curves. Some strains grew only with fructans of low dp, some with fructans from all dp, but faster with fructans from low dp and a few strains grew fast even with higher molecular fructans. The formation of SCFAs by selected probiotic strains or by a mixture of gut bacteria was also dependent on the polymerization degree and branching. Un-branched and branched fructans led to the formation of butyrate which plays a major role in the prevention of colon cancer and other colonic diseases. In conclusion, this study contributes to elucidate the fermentation behavior of selected probiotic strains dependent on the molecular structure and polymerization degree of the fructans and on their formation of SCFAs; playing a major role for usage in functional food industry and pharmaceutical applications.

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Extraction, characterization and fatty acid profile of African star apple seed (*Chrysophyllum albidum*) oil

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Oil was extracted from *Chrysophyllum albidum* seed using petroleum ether as solvent. The yield of the oil was found to be 4.98%. The result of characterization of the oil extract showed that it has iodine value of 163.3 mg, saponification value of 90.71 mg, acid value of 19.70 mg, percentage free fatty acid was 9.90% and dirt content was 0.23%. The specific gravity of the oil at 25°C and its content was found to be 0.8269 and 10.00%, respectively. The color analysis gave red, yellow, blue and neutral to be 1.1, 2.2, 2.1 and 0.0, respectively. Thus, the oil was found to be a drying oil. The fatty acid profile of the oil was also determined with the aid of gas liquid chromatography used fatty acids in methyl esters and was found to have oleic acid (C18:1) as the predominant fatty acid having an area of 40.10125%. It was also found to contain alpha linoleic acid (omega-3) and linoleic acid (omega-6) which are essential to the human body but cannot be synthesized by its metabolic processes.

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Effect probiotics with medicinal plants on broiler meat quality and replacing ability of dietary antibiotic

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One hundred seventy five 1 day old Ross broiler chicks were studied to know the potentiality of plants, *Salicornia herbacea* and *Houttuynia cordata* with probiotics (SHP) and suitable level in replacing antibiotic. For the study, the birds were divided into many groups: control (basal diet), antibiotic (basal diet+0.05% OTC) and 0.5%, 1.0% and 2.0% SHP with basal diet. The birds were randomly arranged in a wire cage with 5 replications having 7 chicks in each. Significantly, highest protein percentage in broiler meat fed 2.0% SHP was recorded when compared with other groups (P<0.05). Crude fat significantly reduced in 1.0% SHP like antibiotic compared to 2.0% SHP and control group (P<0.05). The lipid oxidation of meat in SHP groups showed significantly lower values compared to control (P<0.05). Lowest abdominal fat was found in 0.5 to 1.0% SHP compared to 2.0% SHP and similar with antibiotic fed broilers (P<0.05). Mineral in meat (Fe and Mg) showed an increasing trend in the increasing level of SHP than other groups. Although no statistical differences were observed in n6/n3 fatty acids among the group, but there is a lowering trend noticed in 1.0% SHP fed broiler meat. In conclusion, addition of 1.0% SHP can be suitable level in improving meat quality and replacement of antibiotic that could be utilized for safe food for human as well as baby.

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Antioxidant properties of yoghurt fortified with cocoa powder and the impact of supplementation on the consumer acceptability in Southwest Nigeria

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The increasing awareness of the nutritional and functional benefits of cocoa powder requires its adoption into foods to enhance its utilization. This study investigated the possibility of incorporating cocoa powder into milk for yoghurt production and the effect of this incorporation on the nutritional and antioxidant properties, as well as consumer acceptability of the cocoa-milk yoghurt. Skimmed milk was replaced with graded levels of alkalized cocoa powder (10-50%) and used to prepare yoghurt using standard method. The products were thereafter evaluated for their nutritional composition, microbiological quality, antioxidant properties and sensory attributes. Physical evaluation of the products showed that viscosity (which ranged from 0.28-0.35 dpa^{-s}) decreased as cocoa powder supplementation increased; while brix which increased initially, decreased as the inclusion level increased. Although acidity varied, pH was not significantly affected. Proximate chemical composition of the yoghurts ranged from 6.24-6.73%, 0.11-0.24%, 0.74-1.01%, 0.10-0.21% and 8.58-9.81% for crude protein, crude fat, total ash, crude fiber and carbohydrate all of which increased significantly as cocoa powder supplementation increased, while moisture decreased. Ca (50.21-110.21 mg/l), Mg (64.07-164.71 mg/l), K (81.53-711.65 mg/l), Na (22.05-120.70 mg/l), Zn (5.38-17.58 mg/l), Fe (1.47-3.42 mg/l) increased, while P (110.20-120.69 mg/l) and Cu (0.03-0.04 mg/l) were not affected. Vitamins A, B₁, B₂, B₃, C and E contents increased significantly, while D decreased. Significant increase ($p < 0.05$) was observed in the antioxidant properties (total phenols, flavonoids, 1,1-diphenyl-2-picrylhydrazyl (DPPH radical scavenging ability) of the yoghurt with increase in cocoa powder supplementation. Furthermore, supplementation with 10-50% cocoa powder made significant improvement on the flavor and color of yoghurt and panelists preferred the milk-cocoa yoghurt as compared to the conventional plain milk yoghurt for its unique pleasant chocolate characteristics. Increasing inclusion of cocoa powder significantly improved the nutritive value and antioxidant potentials and by extension the health-promoting potentials of yoghurt.

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Pancreatic lipase inhibitory activities of lactic acid bacteria isolated from raw camel milk

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Obesity, as an ever-growing epidemic, remains the top contributor to global burden of disease. As pancreatic lipase is the primary lipase that hydrolyzes dietary fat molecules in the human digestive tract and obesity is primarily a disorder of lipid metabolism, hence, selective inhibition pancreatic lipase could be targeted for its management. Lipstatin (Orlistat), a FDA approved pancreatic lipase inhibitor obtained from fermentation broth of Actinomycetes remains the most celebrated and successful anti-obesity drug till now. However, excessive inhibition of pancreatic lipase leads to certain discomforts like steatorrhea and isolated cases of organ toxicity. Till today, the ability of lactic acid bacteria (LAB) towards inhibition of pancreatic lipase remains to be unexplored. Hence, the present study was undertaken to explore the pancreatic lipase inhibitory potential of lactic acid bacteria isolated from camel milk. *Streptococcus* and *Lactobacillus* isolates were isolated from raw milk samples collected from local camel farms of Al Ain, Abu Dhabi, UAE. Further screening of lipase inhibitory activity using cell free extracts (CFE) was done and inhibitory activities were determined by comparing the release of p-Nitrophenol from P-Nitrophenyl palmitate through porcine pancreatic lipase type VI, in presence and absence of CFE using Orlistat as positive control while PBS, as negative control. Overall, lipase inhibitory profile of 97 LAB isolates and 11 reference strains was achieved. A wide variation in inhibitory activities was observed among isolates and reference cultures. The *Streptococcus* isolates (52) inhibition ranged from 3.0-99%. 11 isolates possessed potent inhibitory activities comparable or higher than Orlistat (83%; 2 mg/ mL). Among 45 isolates of lactobacilli negative inhibition was observed among 13 isolates, while for rest 32 isolates it ranged from 4.0-81%. Inhibition percentage in reference cultures ranged from 3.0-37%. *L. acidophilus* DSMZ 9126 showed strongest inhibition while *L. gasseri* 20243 showed lowest inhibition. These initial results definitively demonstrate that LAB isolated from raw camel milk have pancreatic lipase inhibitory activities and can reduce the hydrolysis of dietary fats *in vivo* and future use of probiotic bacteria in this field.

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Probiotics: Current applications and future prospective

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Probiotics are defined as live microorganisms that are added to foodstuff in order to enhance the health of their host. Traditionally they have been used in dairy products such as milk, cheese and yogurt. The improvement of technology has allowed advanced exploration of their use. One commonly reported feature is the antibacterial activity which consists of the inhibition of pathogens due to the secretion of bacteriocins. For this reason, some studies have suggested the use of probiotics as a potential alternative to the usual antibiotics which have been linked with the advent of resistant genes. Further studies have reported probiotics to have the ability to reduce lactose in dairy products, improve digestion as well serving as growth promoters in animals. Other reported beneficial aspects of probiotics include lowering cholesterol and the stimulation of the immune system by boosting the production of cytokine and increasing the IgA concentrations. In this paper we evaluate the relationship between the findings of different *in vitro* and *in vivo* research studies on probiotics, the current technological applications as well as prospective development on the use of probiotics.

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Increasing the survival of probiotic bacteria in dairy products using medicinal plants

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Statement of the Problem: Increasing the survival of probiotic bacteria and improve the hygienic quality of dairy products using natural preservatives is widely accepted today, It has long been recognized that some essential oils (EOs) have antimicrobial properties and that they can be used as food flavoring agents or preservatives, and for medicinal purposes. However, to establish the usefulness of natural preservatives, they must be evaluated alone and in combination with other preservation factors (such as probiotic bacteria) to determine whether there are synergistic effects and to devise effective combinations. In this study the effect of *Teucrium polium*, *cumin* and *Mentha longifolia* L. EO on *Lactobacillus casei* survivability and flavor characteristics of yoghurt, cheese and ayran were studied.

Methodology & Theoretical Orientation: *M. longifolia* L. (0, 50, 150 and 300 ppm), *T. polium* (40, 60 and 80 ppm) and *M. longifolia* L. (50, 100, 200 and 300 ppm) EOs and *Lactobacillus casei* (10^8 - 10^9 CFU/mL) were used in cheese, yoghurt and ayran, respectively, viability of *L. casei* and organoleptic properties of these dairy products samples were analyzed during storage period.

Findings: The survival of *L. casei* decreased throughout the storage period. Nevertheless, probiotic dairy products and treatment containing medium concentration EOs (*T. polium*: 60 ppm, *M. longifolia*: 150 ppm in yoghurt and 200 ppm in ayran) had the highest ($P<0.05$) viable count of probiotic bacteria. But the lowest concentration of these EOs was the most appropriate treatment ($P<0.05$) in sensory assessment.

Conclusion & Significance: Based on our results, dairy products such as yoghurt, cheese and ayran can be a very suitable food product to carry relevant probiotic bacteria while adding certain herbal EOs.

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Dairy value chain analysis in Harar and Dire Dawa milk-shed areas, Ethiopia

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The study is aimed at mapping the dairy value chain, assessing constraints and opportunities for the development of the dairy sector, and identifying factor affecting channel choice decisions of smallholder dairy producers in and around Harar and Dire Dawa milkshed areas. Necessary data were collected from a total of 93 producers, six collectors, seven wholesalers, seven retailers, and ten consumers in the study areas. To analyze the collected data, both descriptive and multinomial logit model were employed. The descriptive statistics result obtained indicates that producers mostly sell the raw milk to collectors and to consumers as compared to the other actors. Collectors, on the other hand, sell the milk to wholesalers and retailers, and wholesalers mainly sell the milk to retailers. Almost all of the dairy farmers own local dairy cattle breeds. The channel choices available to producers include selling to collectors, wholesalers, retailers, and directly to consumers. Considering collectors as a base channel, the multinomial model output indicated that area dummy, breed type, availability of separate milking place, and supply of hay were found negatively and significantly determining the producers choice to sell to wholesaler, retailers, and consumers. In contrast, education status of the household head and the period in which milk stays after milking were found to positively and significantly determine producers' choice to sell not to collectors. The major recommendations include provision of training and credit and encouraging farmers to involve in collective actions, among others.

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An audit to assess the frequency and severity of accidental allergic reactions in cow's milk allergic children

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Background: Milk is the 2nd most common allergen after Peanuts and the annual frequency of accidental allergic reactions in recent studies from Spain and USA has been shown to be 34-40%. The AAR severity is dependent on food allergens and history of atopic diseases such as asthma, eczema, hay-fever and recurrent wheeze.

Objectives: To evaluate the frequency of accidental allergic reactions in the UK in a two-month audit thus observe variation depending on geographical distribution, determine the risk factors that would affect the severity of clinical characteristics and circumstance where the reactions occurred.

Methods: A structured interview using a standardized questionnaire on 62 patients (35 male and 27 female; median age 67 months). The questions entailed; the number of accidental reactions and where they occurred, the severity of the reactions, other food allergies and risk factors such as asthma, hay-fever, recurrent wheeze and eczema. The symptoms were classified as mild, moderate and severe. The previous and current skin prick test was also recorded.

Results: The annual AAR frequency was 57%. 37 (60%) children had 51 accidental reactions in the past year (43% mild, 19% moderate and 38% severe). 60% of the reactions took place at home and Piriton was the major mode of treatment (79%). Three reactions were anaphylactic and the children were rushed to hospital where epinephrine was administered (Epipen injections). Oral was the main type of exposure (89%) and products containing milk were the main types of food (51%). 48% of patients who had a wheal size above the median had moderate to severe symptoms.

Conclusions: Accidental allergic reactions are frequent in children and this was brought about by, contamination, mislabelling, change of recipes by companies, misreading by caregivers and direct milk intake. The risk factors for AAR severity were hay-fever, Peanut allergy, having more than one atopic disease and the current wheal size (p-value <0.05).

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