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December 12-13, 2018 | Abu Dhabi, UAE

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PLASMA TRIMETHYLAMINE-N-OXIDE AND IMPAIRED GLUCOSE REGULATION: RESULTS FROM THE ORAL INFECTIONS, GLUCOSE INTOLERANCE AND INSULIN RESISTANCE STUDY (ORIGINS)

Sumith Roy, Melana Yuzefpolskaya, Renu Nandakumar, Paolo C Colombo and Ryan T Demmer

Columbia University, USA

Trimethylamine-N-oxide (TMAO) – a gut-microbiota derived metabolite – is an emerging biomarker of cardiometabolic risk. No studies have investigated the utility for TMAO as an early biomarker of diabetes risk. We investigated the association between plasma TMAO and biomarkers of diabetes risk. The Oral Infections, Glucose Intolerance and Insulin Resistance Study (ORIGINS) is a longitudinal cohort study among n=300 diabetes-free participants enrolled at baseline and re-examined at 2-years. Participants were men and women (77%) aged 20-55 years (mean=34 10) without: i) Diabetes Mellitus based on self-report physician diagnosis, fasting plasma glucose (FPG) 126 mg/dl or HbA1c 6.5% (48mmol/mol); ii) self-reported history of myocardial infarction, congestive heart failure, stroke or chronic inflammatory conditions. Plasma TMAO was measured using Ultra Performance Liquid Chromatography-Mass Spectrometry. Baseline FPG, HbA1C and insulin were measured after an overnight fast. Insulin resistance was defined using HOMA-IR. FPG was remeasured two-years after baseline in n=241 participants. Multivariable generalized linear models regressed FPG, HOMA-IR and HbA1c on tertiles of TMAO. Multivariable relative risk regressions modeled prediabetes across TMAO tertiles. Mean values of 2-year longitudinal FPG SE across tertiles of TMAO were 86.6 0.9, 86.7 0.9, 86.4 0.9 (p=0.98). Trends were similarly null for FPG, HbA1c and HOMA-IR, cross-sectionally. The prevalence ratio of prediabetes among participants in the 2nd and 3rd TMAO tertiles (vs. the 1st) were 1.94 [95%CI 1.09-3.48] and 1.41 [95%CI: 0.76-2.61]. TMAO levels are modestly associated with an increased prevalence of prediabetes in a nonlinear fashion but not with insulin resistance or longitudinal FPG change.

BIOGRAPHY

Sumith Roy is an experienced doctoral researcher with a demonstrated history of working in the higher education industry. She is skilled in Statistics, Research, Clinical Research, Medical Education, and Life Sciences. She is a strong research professional with a Master of Public Health (MPH) focused in Epidemiology from New York Medical College.

ssr2160@cumc.columbia.edu



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DISEASES OF THE ORAL MUCOSA AND CONNECTION WITH DIABATES: AN EPIDEMIOLOGICAL OVERVIEW

Carla Mannu, Cinzia Casu and Riccardo Botta

Private Practice, Italy

Diabetes is a disease often associated with multiple oral soft tissues pathologies. Recent studies report contrasting prevalence values on this association. To date it is not clear whether oral diseases are a consequence or a predisposing factor to diabetes, but their association is known. High blood glucose concentrations may underlie infectious, inflammatory and autoimmune diseases and may also alter the normal process of cellular repair. All this gives rise to changes in the endothelium, resulting in alteration of the oral biofilm and oral mucosal. A review of 2017 showed that 50% of clinical studies have found multiple alterations of the oral mucosa in patients with diabetes (DM). A review of 2016 was found that the pathologies of the oral mucosa had a prevalence of 44% in patients with diabetes type 1 (T1D), and 25% in the control group. The most common oral diseases associated with diabetes, and therefore more common in daily clinical practice, are: oral Candidosis, oral Lichen planus, fixed tongue, Coated tongue, migrant Glossitis, Hairy Leucoplakia, Burning Mouth Syndrom, Recurrent Aphthous Stomatitis, Xerostomia, Disgeusia and finally Halitosis. In particular, as regards oral candidosis, the *Candida* is an important fungal pathogen, which can cause the onset of systemic infectious diseases, oral and vaginal, predominantly in the elderly and in immunocompromised patients. In the oral cavity it mainly colonizes the buccal mucosa, palate, and, more rarely, the tongue. The species of *Candida* are over 150, and are usually found in a state of commensalism, only some species are pathogenic. Among the most common species we have *C. Albicans*, *C. dubliniensis* (isolated in HIV +), *C. glabrata* (frequent in the elderly). In 40% of healthy subjects, there is no sign of infection, Candidosis infection occurs when there is an imbalance between the immune defenses by the patient and the onset of systemic factors (protracted antibiotic therapies in the time and/or xerostomia) or local (smoke, use of dental prostheses, repeated trauma and poor oral hygiene) that can favor the colonization of the fungus. We would like to report some epidemiological data on the literature on the connection between diabetes and oral disease, with the aim to underline the importance of interdisciplinary work between dentists and diabetologist.

BIOGRAPHY

Carla Mannu has completed a master's degree in Biological Sciences obtained with honors at the University of Cagliari – Italy. She worked 2 years to Oral Biotechnology Laboratory (OBL) and to DNA Sequencing Service (DSS), University of Cagliari. From 2012 to present (six years) she worked in the diabetes unit in the St Michele Hospital, Cagliari, as a researcher about Type 1 Diabetes, and as a local Clinical Study Coordinator of clinical trial and as a clinical data manager. She, in addition to running diabetes research still working with several dentists in the field of related diseases. She has published more than 10 papers in reputed journals.

ginzia.85@hotmail.it



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APHTHOUS LESIONS IN A CELIAC POPULATION: AN EPIDEMIOLOGICAL STUDY

Cinzia Casu, Carla Mannu and Riccardo Botta

Private Practice, Italy

Oral aphthous ulcers are common lesions of the oral mucosa. Celiac disease (CD), is an autoimmune disease in which individuals exhibit damages in the small intestine villi as a consequence of an abnormal immune response subsequent to the ingestion of gluten. The aim is to report the percentage of aphthous lesions in a celiac population of 212 patients. Inclusion criteria were CD assessed with histological examination, aged between 6 and 12 years. Patients who showed aphthous lesions at the moment of the oral examination were recorded and the patients were interviewed to find out if they had had other episodes of ulcers in the last 2 years. 84 patients had no episodes of mouth ulcers during the last 2 years (39.5%) while 128 had at least one episode of canker sores (60.5%). In 45 these are localized in the upper vestibular mucosa (35%), in 31 in the lower vestibular mucosa (24%). In 25 patients, lesions were localized in the tongue (20%), in 15 patients on the cheek (11.5%) and in 12 cases in the floor of the mouth (9.5%). Discussion. Saraceno et al. found that RAS appear in 69% of the CD patients, compared to the 43% in the control group. In a work of Campisi et al. the prevalence of oral soft tissues lesions was 42% in the coeliac disease patients and 2% in controls. The results of our study is partially in accordance with previous epidemiological studies. The difference in Italian diet could be explain the difference of the epidemiological values in the literature. The importance of the correlation between aphthous lesion and CD is the basis of study protocols that include observation of the oral cavity as a means of screening for celiac disease.

BIOGRAPHY

Cinzia Casu has completed a master's degree in Biological Sciences obtained with honors at the University of Cagliari – Italy. She worked 2 years to Oral Biotechnology Laboratory (OBL) and to DNA Sequencing Service (DSS), University of Cagliari. From 2012 to present (six years) she worked in the diabetes unit in the St Michele Hospital, Cagliari, as a researcher about Type 1 Diabetes, and as a local Clinical Study Coordinator of clinical trial and as a clinical data manager. She, in addition to running diabetes research still working with several dentists in the field of related diseases. She has published more than 10 papers in reputed journals.

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ABSTRACTS**

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ROLE OF LHWS IN PROVISION OF NUTRITIONAL SERVICES IN CHILDREN UNDER 5 IN PERI URBAN AREAS OF KARACHI

Nazia Aamir

Aga Khan University, Pakistan

Globally, one of the major risk factors for child morbidity and mortality is considered to be malnutrition. Malnutrition is attributable for nearly half of all deaths in children under 5 years of age and every year there is a loss of about 3 million lives unnecessary. However, studies have shown that Lady Health Worker (LHW) plays an important role and can deliver nutrition services to underserved populations, despite the fact that working in a weak health system is a challenge for LHW to provide services. The exploratory qualitative research design was used for the research. Our target populations were mothers, LHWs and the nutritional expert, behavior change communication expert (BCC), LHW program experts, field officer, and lady health supervisor. The data collection methods that were used for the study were focus group discussion (FGDs) and key informant interviews (KIIs). The analysis of this study reveals that LHWs are not skill-trained to address the nutritional component according to their mandates. The main associated factors from the health care provider perspective were found to be lack of intersectoral approach that is the integration of the LHW program with the other vertical program, low morale of LHWs, knowledge gap among the LHWs, lack of awareness among the community, beliefs of the community and excessive workload. From mothers perspective; inappropriate communication, unavailability of logistics are the factors that affect the performance of LHWs. It was concluded that training of the LHWs on the nutritional services is an issue. Thus, LHWs are unable to provide their services to the community. In this regards implementation and coordination among the stakeholders, continuous education and awareness for the community and LHWs, overcoming the logistic issue are the key solutions for improving the role of LHWs and quality of nutrition services.



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ENVIRONMENTAL AND FAMILIAL FACTORS IN DRUG USE AMONG COMMERCIAL DRIVERS IN SUBURBAN PUBLIC TRANSPORT

Elaheh Ainy and Hamid soori

Shahid Beheshti University of Medical Sciences, Iran

Environmental and family factors play an important role in the use of drugs among drivers of public transport. A study was conducted in 2013 on the lack of accurate statistics on the environmental and family factors behind the use of drugs by drivers. Overall, 1176 drivers of buses, mini-buses, vans, all kinds of trucks, and cars were randomly selected proportionately according to the type of vehicles. The capture-recapture sampling method was used to determine the prevalence rate of drug use among commercial drivers. Trained experts collected data regarding the environmental and family factors behind the use of addictive drugs. Urine samples of the participating drivers were taken at police checkpoints. Urinalysis was performed by the Rapid Test method (ACON, San Diego, USA). The mean age of the subjects was 39.9 ± 9.7 years. The results of the experiment were positive in 14.1% of the drivers. A significant difference observed between addicted and non-addicted drivers related to cold and heat ($P < 0.001$) and lack of facilities ($P = 0.006$) as the most influencing factors. The most important environmental factor was family poverty ($P < 0.001$), followed by marital status and its problems ($P = 0.002$), a large number of children ($P = 0.006$), and family disputes ($P = 0.012$). A family history of addiction was 2.5 times more among addicted drivers. Prevalence of addiction was 14.1%. Among the environmental factors, cold and heat, lack of facilities, family factors, and a family history of addiction greatly influenced addiction.

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AUGMENTATION OF TRICLABENDAZOLE THERAPY WITH HERBAL EXTRACT IN OVINE FASCIOLOSIS

Guesh N¹, Etsay K¹, Yohannes T¹, Endale B¹, Awet T¹, Kassaw A¹ and Yohannes H¹

Aga Khan University, Pakistan

Fasciola is a major parasite of sheep around Lake Hashenge that is claimed to cause serious destruction of liver and liver condemnation (more than 80%) which lead to loss of profit/market despite its potential nutritional and price value. Liver infested with fasciola is hard and fibrotic and is not fit for human consumption regardless of its zoonotic potential. Triclabendazole is the drug of choice for treating fasciolosis but triclabendazole have no effect in the healing or regeneration capacity of the already damaged liver by the parasite unless augmented with other natural herbal preparations which make the damaged liver heal faster. Therefore, this project was designed to study the augmentation responses of herbal extract to triclabendazole therapy which was expected to facilitate the regeneration and healing process of the liver of sheep. A total of 12 naturally fasciola infested sheep diagnosed with coprological examination were used in this study. The 12 naturally fasciola infested sheep were grouped into three groups (G1=Experimental, treated with both triclabendazole and the herbal extract bolus; G2=Experimental, treated only with triclabendazole; and G3=Control, not treated with either of the treatments) each containing 4(four) sheep. Herbal bolus were prepared at the College of Veterinary Medicine, Mekelle University and used for augmentation. Three months after the treatment sheep in all the three groups were coprological examined. The effect of augmentation was evaluated with liver function tests, gross pathology and histopathology. All the data were analyzed using STATA version-11.0 statistical software and P-value of 0.05 was considered a statistically significant difference for all analysis. Gross findings showed live fasciola parasite and severe liver damage; irregular shaped and rough fibrotic liver; and liver with slight fibrosis and distended gall bladder in G3, G2 and G1, respectively. Liver function test results were higher in the control group (G3) compared to G1 and G2 (P<0.05). Microscopic findings of the tissue samples revealed liver with very sever necrotized area with diffused extensive fibrosis (cirrhosis) around the section of parasite in the middle; liver

with moderate necrotized area with diffused extensive fibrosis (cirrhosis); and liver with fibrosis (cirrhosis) being degraded and regeneration of hepatocytes around it in G3, G2 and G1, respectively. Augmentation of triclabendazole with herbal extract improves the healing and regeneration capacity of fasciola infested liver and thus it should be encouraged.

CHANGES IN SEXUAL BEHAVIORS DUE TO THE UTILIZATION OF PREP AS A PREVENTIVE METHOD FOR THE TRANSMISSION OF HIV

Michael Dean Kaltenbach

University of Pennsylvania, USA

According to The Joint United Nations Programme on HIV/AIDS (UNAIDS) and the World Health Organization (WHO), approximately 33.4 million individuals throughout the world have been affected by HIV/AIDS in the last 30 years or so (Bonacquisti & Geller, 2013). The medication, Truvada, otherwise known as PrEP, has been introduced to serve as a harm reduction technique to combat the spread of HIV infection. PrEP is an antiretroviral drug that lowers the risk of HIV exposure. This is a qualitative study examining the sexual behaviors of gay and bisexual men prescribed PrEP as a preventive method for the transmission of HIV. I conducted 30 semi-structured in-depth interviews of people who had been prescribed PrEP for at least 30 days in three cities: Los Angeles, Philadelphia, and New York City. The results indicate that contextual factors shaped the sexual behaviors of participants on PrEP, leading them to lower risk at times, and elevate it at others. PrEP caused individuals to experience changes within their communication patterns with their medical providers and their sexual partners. The results shed light on the way people on PrEP engage in sexual and health-seeking behaviors, and help to develop a blueprint for the way service providers engage with this community.

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COMPARISON OF ANTISEPTICS' EFFICACY ON BACTERIAL INFECTION PREVENTION IN HOSPITAL ENVIRONMENT

Mohammad Hadi Dehghani and Fahim Amini

Tehran University of Medical Sciences, Iran

In this study the efficacy of antiseptics on bacteria causing hospital infections has been studied. In this study the antimicrobial activity of Descocid, Korsolex basic, Mikrobac forte and persidin 1% was studied against bacteria causing hospital infections such as *Enterobacter aeruginosa* 1221 (NCTC 10006), *Staphylococcus epidermidis* (PTCC: 1435 (Cip81.55)) and *Pseudomonas aeruginosa* Strain PA01. Sensitivities of bacteria were determined by Minimum inhibitory Concentration (MIC) and Minimum bactericidal Concentration (MBC) antiseptics. In the second stage, the concentration of antiseptics was prepared according to the manufacturer's suggested protocol and the effect of antimicrobial agents were studied at the certain concentration and contact time. All disinfectants (Descocid, Korsolex basic, Mikrobac forte) concentration and contact time, Accordance with the manufacturer's brochure, had inhibitory effect on all bacteria. That this is consistent with the manufacturer's brochure. Persidin one percent in concentration of from 2 and 4 V/V % and exposure time 5 minutes could not inhibit the growth of bacterial. But at concentrations of 10 and 20% respectively 15 and 30 minutes exposure time, all three types of bacteria can be inhibited, which is consistent with the manufacturer's claims. In this study, the efficacy of antiseptics was determined with the Micro-dilution method recommended by the NCCLS. Korsolex basic, weakest antiseptics (the highest MIC) for the inhibition of three bacteria was determined. But Between all four antiseptics (according to manufacturer concentration), Only one percent Percidine 2 and 4 V/V % in consumer dilution and 5 minutes exposure time failed to inhibit the growth of *Pseudomonas aeruginosa*, *Staphylococcus epidermidis* and *Enterobacter aeruginosa*.

COMPARISON OF MEASUREMENTS OF NOISE LEVELS WITH NOISE ANNOYANCE CRITERIA

Peplow A, Alkhoori L and Elamin A

Zayed University, UAE

As part of a preliminary study, a detailed investigation was commissioned to evaluate the extent to which actual daily and weekly noise levels around various suburbs differ from long term values derived from annoyance criteria. This provided the opportunity to gauge to what levels can estimate noise levels measured over extended periods, to be used as a context to a wider study. An extensive series of data was recorded for locations in the areas surrounding an existing airport and highway and a less-densely populated community for a period of 4 weeks. Noise indicators such as Lden and Lnight, regardless of any weighing factors, describe the exposure situation. Conclusions are drawn against these and well-known Kurze annoyance graphs and WHO Noise Guidelines for Day, Evening and Night.



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REASSESSING THE ROLE OF EPIDEMIOLOGY IN PUBLIC HEALTH

Mohammed Sultan

Jazan University, Saudi Arabia

The oral presentation will cover the scope and different roles of epidemiology in public health. Epidemiology is the backbone of public health. It is the basic science of public health, as it is the science that describes the relationship of health and disease with other health-related factors in human populations. It provides the basic knowledge related to: health and disease occurrence, distribution and trends through public health surveillance (Descriptive epidemiology), causes and risk factors of diseases and health related events (Analytical epidemiology), effectiveness of population-based control and preventive measures (Interventional epidemiology). Furthermore, epidemiology provide health professionals with the appropriate methodologies to evaluate the effectiveness of the newly developed preventive and curative procedures as vaccines (Clinical trials & Community trials), that played a significant role in diseases elimination and eradication. In addition, epidemiology will continue to be a main source of knowledge for health policy. Case studies based on real life public health issues and events will be presented to reinforce the different roles of epidemiology in public health as well as public health policy.



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