



# Pediatrics

# Virtual 2020

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## Sept 14-15, 2020

“Theme: Boosting Recent Advances  
in Pediatrics and Neonatology”

# PEDIATRICS VIRTUAL 2020

SEPTEMBER 14-15, 2020

**Theme:**

Boosting Recent Advances in Pediatrics and Neonatology

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# *About* **MAGNUS GROUP** |

**Magnus Group (MG)** is initiated to meet a need and to pursue collective goals of the scientific community specifically focusing in the field of Sciences, Engineering and technology to endorse exchanging of the ideas & knowledge which facilitate the collaboration between the scientists, academicians and researchers of same field or interdisciplinary research. Magnus group is proficient in organizing conferences, meetings, seminars and workshops with the ingenious and peerless speakers throughout the world providing you and your organization with broad range of networking opportunities to globalize your research and create your own identity. Our conference and workshops can be well titled as 'ocean of knowledge' where you can sail your boat and pick the pearls, leading the way for innovative research and strategies empowering the strength by overwhelming the complications associated with in the respective fields.

Participation from 90 different countries and 1090 different Universities have contributed to the success of our conferences. Our first International Conference was organized on Oncology and Radiology (ICOR) in Dubai, UAE. Our conferences usually run for 2-3 days completely covering Keynote & Oral sessions along with workshops and poster presentations. Our organization runs promptly with dedicated and proficient employees' managing different conferences throughout the world, without compromising service and quality.

# *About* **Pediatrics Virtual 2020** |

**"Pediatrics Virtual 2020"** during **September 14-15, 2020** with the theme "Boosting Recent Advances in Pediatrics and Neonatology" will offer you an impressive roster of speakers, quality attendees and compelling content and is an excellent opportunity for leading academicians and scholars from universities and institutes to interact with the world-class scientists. You can increase your professional skills in this free time and discuss the practical challenges encountered and the solutions adopted.

# KEYNOTE FORUM

## PEDIATRICS VIRTUAL 2020

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2020

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PEDIATRICS VIRTUAL 2020





## Alonim, H<sup>1,2</sup>, Lieberman I. <sup>3</sup>, Tayar, D.<sup>1,4</sup>, Scheingessicht, G.<sup>1</sup>, Braude, H.<sup>1</sup>

<sup>1</sup>The Mifne Center, for Treatment, Research and Training, Israel

<sup>2</sup>Bar Ilan University, School of Social Science, Israel

<sup>3</sup>Bar Ilan University, Department of Sociology & and Anthropology, Israel

<sup>4</sup> Ministry of Health

### **CBridging the Gap Between Early Detection of Autism Prodrome in Infants and intervention: Clinical and Study Perspectives**

**Introduction:** Clinicians and researchers increasingly realize the importance of early intervention for autism. Early intervention through the use of suitable stimulation may minimize the severity of the phenotypic presentation of autism during infancy when neural connections are being developed. However, intervention is contingent upon a diagnosis of autism – which in most developed countries occurs above the age of 24 months – resulting in missing a critical therapeutic opportunity for early intervention. This study aimed to detect the prodromal variables that may characterize significant risk for the later development of autism, in order to propose therapeutic strategies.

**Methods:** This study examined variables among 110 infants from various countries diagnosed with autism at age 2-3 years. Analysis was conducted of home videos recorded during the infants' first 15 months of life. Developmental information was collated via parental questionnaires. Data was analysed in terms of individual variables and combinations of variables.

**Results:** Eight prodromal variables were exhibited among 89% of the infants participating in this study: lack of eye contact (77.3%); excessive passivity (44.5%); lack of reaction (44.5%); motor development delay (33.6%); refusal to eat (20.9%); excessive activity (28.2%); head circumference (12.7%); aversion to touch (10%). Cluster analysis of combinations of variables was significant, e.g. a combination of lack of eye contact with lack of reaction (37.3) and lack of eye contact with excessive passivity (35).

**Conclusions and outcomes:** The results of this study indicate that detecting the prodrome of autism depends primarily on the ability to identify various combinations of indicative symptoms. The variables elicited by this study provide the basis for an early assessment scale for prodromal variables associated with autism. The variables provided the basis for developing the Early Symptoms of Pre-Autism Screening Scale in Infants (ESPASSI©), which is applied clinically for infants between 5-15 months. A pilot validation study at Ichilov Hospital examined the clinical efficacy of ESPASSI©. Effective application of this screening scale is of utility in bridging the divide between early assessment and intervention. The identified variables contribute the foundation for therapeutic strategies targeting infants at high risk for autism during the very early neurodevelopmental stages.

#### **Biography**

Dr. Hanna A. Alonim, Ph.D in Mental Health is an expert and researcher in the autism spectrum in infancy. Founder and Head of the Mifne Center, for Treatment, Training, and Research, since 1987. Head of the Therapists' Training School for Autism at the Bar Ilan University. She developed the ESPASSI © screening scale for the detection of the autism prodrome in first year of life. Dr. Alonim is a committee member of the ICF Core Set for ASD, Stockholm 2016.



**Gamal Al-Saied <sup>a,c</sup>, \* Talal Al-Malki <sup>b</sup>, Mohamed Ayoub <sup>c</sup>, Tharwat Hussain <sup>a,c</sup>, Riyadh Thabet <sup>c</sup>, Ahmed Gamal <sup>a</sup>, Ziyad AlNefaie <sup>c</sup>, Khader AlQarnic <sup>c</sup>, Waleed AlThobaitic <sup>c</sup>, Abdul Aziz Almalkic <sup>c</sup>, Faris Habib <sup>c</sup>**

<sup>a</sup>College of Medicine, Al-Azhar University, Cairo, Egypt

<sup>b</sup>Al-Taif University, Taif-KSA, Saudi Arabia

<sup>c</sup>King Abdul Aziz Specialist Hospital, Taif-KSA, Saudi Arabia

## Unusual cause of small-bowel obstructions in infants: A warning letter to the parents

**Abstract:** Foreign body ingestion is a common problem in the pediatric age group. Infants and young children explore objects by putting them in the mouth. Decorative crystal balls swell when they come in contact with water or water containing solutions. This may result in grave complications. Herein, we report on an unusual cause of small-bowel obstructions in three infants due to ingestion of decorative crystal ball.

**The audience should know that:** Some foreign bodies can be harmful and require immediate intervention. In case of crystal gel ball ingestion, immediate endoscopic retrieval is recommended if the patient presents immediately after ingestion. Parent's awareness through media is required to abandon decorative crystal gel balls in houses and where children can ingest these toxic materials.

### Biography

Professor Gamal Al-Saied graduated in 1986 from Al-Azhar University with Bachelor's Degree in medicine and surgery with general grade very good with honor. Internship in 1987. Pediatric surgery Resident from 1989 till 1992. Master's Degree (MSc) pediatric surgery in 1991. Demonstrator of pediatric surgery in 1992, Assistant lecturer in 1993. Medical Doctorate degree (MD) in 1998. Lecturer of pediatric surgery in 1998. Assistant professor of pediatric surgery in 2004. Fellowship of European Board In 2008, Glasgow, Scotland. Full professor of pediatric surgery in 2009. 30 international publications. Chairman of sessions in international conferences. Editor in chief of many international journals.

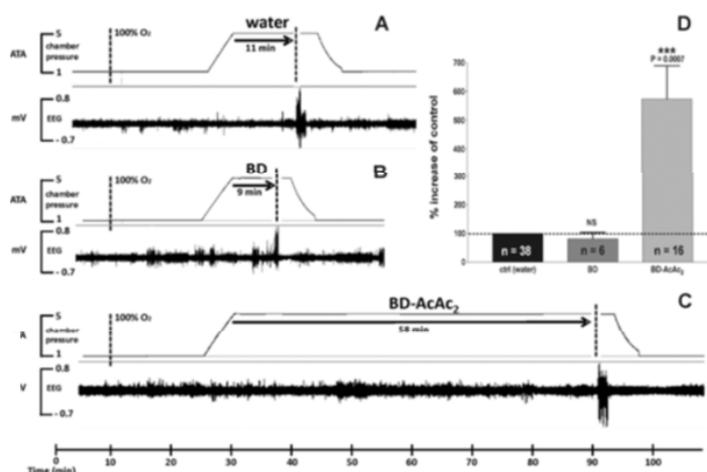


## Raffaele Pilla

St. John of God Hospital, Italy

### Therapeutic ketosis and the broad field of applications for the ketogenic diet: Ketone ester applications & clinical updates

It has been recently shown that nutritional ketosis is effective against seizure disorders and various acute/chronic neurological disorders. Physiologically, glucose is the primary metabolic fuel for cells. However, many neurodegenerative disorders have been associated with impaired glucose transport/metabolism and with mitochondrial dysfunction, such as Alzheimer's/Parkinson's disease, general seizure disorders, and traumatic brain injury. Ketone bodies and tricarboxylic acid cycle intermediates represent alternative fuels for the brain and can bypass the ratelimiting steps associated with impaired neuronal glucose metabolism. Therefore, therapeutic ketosis can be considered as a metabolic therapy by providing alternative energy substrates. It has been estimated that the brain derives over 60% of its total energy from ketones when glucose availability is limited. In fact, after prolonged periods of fasting or ketogenic diet (KD), the body utilizes energy obtained from free fatty acids (FFAs) released from adipose tissue. Because the brain is unable to derive significant energy from FFAs, hepatic ketogenesis converts FFAs into ketone bodies-hydroxybutyrate (BHB) and acetoacetate (AcAc)-while a percentage of AcAc spontaneously decarboxylates to acetone. Large quantities of ketone bodies accumulate in the blood through this mechanism. This represents a state of normal physiological ketosis and can be therapeutic. Ketone bodies are transported across the blood-brain barrier by monocarboxylic acid transporters to fuel brain function. Starvation or nutritional ketosis is an essential survival mechanism that ensures metabolic flexibility during prolonged fasting or lack of carbohydrate ingestion. Therapeutic ketosis leads to metabolic adaptations that may improve brain metabolism, restore mitochondrial ATP production, decrease reactive oxygen species production, reduce inflammation, and increase neurotrophic factors' function. It has been shown that KD mimics the effects of fasting and the lack of glucose/insulin signaling, promoting a metabolic shift towards fatty acid utilization. In this work, the author reports a number of successful case reports treated through metabolic ketosis.



**Figure 1:** Ketone Ester significantly increased resistance against Central Nervous System Oxygen Toxicity seizures (D'Agostino D.P. et al., 2013 Am J Physiol Regul Integr Comp Physiol. 304(10):R829-36).

### Recent Publications

1. D'Angelo G., Pilla R., Dean J.B. and Rampone S. Toward a soft computing-based correlation between oxygen toxicity seizures and hyperoxic hyperpnea *Soft Computing*: DOI 10.1007/s00500-017-2512-z (2017)
2. Pilla R. The ketogenic diet approach as metabolic treatment for a variety of diseases *J. Epilepsy*: 2:2 <http://dx.doi.org/10.4172/2472-0895.1000e010> (2016)
3. Viggiano A., Pilla R., Arnold P., Monda M., D'Agostino D.P., Zeppa P. and Coppola G. Different calorie restriction treatments have similar anti-seizure efficacy. *Seizure*: Feb; 35:45-9 (2015)
4. Pilla R., Held H.E., Ciarlone G., Landon C.S. and Dean J.B. Female rats are more susceptible to central nervous system oxygen toxicity than male rats *Physiol. Rep.*: Apr 9;2(4):e00282. doi: 10.14814/phy2.282 (2014)
5. Pilla R., Landon C.S. and Dean J.B. A potential early physiological marker for CNS oxygen toxicity: hyperoxic hyperpnea precedes seizure in unanesthetized rats breathing hyperbaric oxygen *J. Appl. Physiol.*: 114(8), 1009-20 *Interventions. Proc. Natl. Acad. Sci., India, Sect. B Biol. Sci.* DOI 10.1007/s40011-017-0885-5. (2013)

### Biography

Raffaele Pilla, Pharm.D., Ph.D., Doctor Europaeus, received his Master's degree in Pharmacy at G. d'Annunzio University in Chieti-Pescara, Italy in 2005, where he also served internships at the Cell Physiology Laboratory and Molecular Biology Laboratory. Prior, he was an Erasmus Student at Faculté de Pharmacie de Reims in Reims, France. He received his Doctor Europaeus in 2010 from Pitié-Salpêtrière Institute in Paris, France. Also in 2010, he received his Ph.D. in Biochemistry, Physiology, and Pathology of Muscle at G. d'Annunzio University in Chieti-Pescara, Italy. He was hired as a Postdoctoral Scholar in the Department of Pharmacology and Physiology at the University of South Florida in Tampa, on two research grants funded by the Office of Naval Research (US Navy) and Divers' Alert Network. He has written and lectured widely worldwide. He has been involved in ongoing research at the University of South Florida with the use of ketone esters.

# SPEAKERS

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## Imaging Findings of Pediatrics Infection & Parasitic Skin Diseases

Yuping Ran

West China Hospital, Sichuan University, China

**Introduction:** Infection and parasitic skin diseases in children are very common, and is a challenge of clinical diagnosis for details observation of the skin and sample-taken for microscopy. Dermoscopy has been widely used in the pigmented, neoplastic and inflammatory skin diseases. It has rarely been applied for infectious skin diseases for worry about the possibility of cross-infection by contacting each other. We used parafilm and disposable polyethene gloves to cover the front edge of dermoscope during contact with the lesion. Hence dermoscopy could be routinely used to observe the detailed lesion of the infectious skin diseases. In addition, ultraviolet (UV-dermoscopy) could more surprisingly unveil their mystery.

**Diseases and Results:** 1. Viruses infected skin diseases including molluscum contagiosum, verruca vulgaris, condyloma acuminatum, chickenpox, herpes zoster and simplex are easily diagnosed according to their special characteristics under dermoscopy. 2. Fungal infected diseases consist of tinea capitis, white piedra, tinea pedis, onychomycosis, tinea cruris, tinea corporis, pityriasis versicolor, *Malassezia* folliculitis, penicilliposis *marneffeii*, sporotrichosis and chromoblastomycosis. 3. We observed all the life cycle stages of *Phthirus pubis* namely translucent empty nits, nits containing nymphs, nymph and adult phases within a single field view. The nits containing nymphs were brown and ovoid, the empty nits had flattened ends, and lice were seen grasping hairs with claws, inserting mouthparts into the skin, sucking the blood into their body. We used simple methods to enhance the diagnosis of scabies: ultraviolet dermoscopy demonstrated bright-white fluorescence and polarized dermoscopy after ink staining showed burrow, mite and its eggs were very clear. From a 44-year-old female presented with erythematous pruritic scales around the rosacea skin surface of nasolabial folds demonstrating follicular plugs by polarized dermoscopy. *Demodex folliculorum* was confirmed under light microscopy. Bright-pink, light-blue and light-green fluorescence under high-resolution UV light dermoscopy, indicated the metabolites of *Propionibacterium acne*, *Malassezia* yeasts and velvet hair respectively. Notably, a live *Demodex folliculorum*, was traced continuously crawling at time intervals respectively.

**Conclusions:** Parafilm and disposable polyethene glove are simple, easily available, cheap, and useful measures to maintain clean dermoscopy. We first described the cigarette-ash-shaped hair after effective antifungal treatment. UV-dermoscopy can also act as a mini and portable wood's lamp device. UV light dermoscopy particularly investigates microbe and parasite without interfering the natural ecology of the skin surface. Dermoscopy is a convenient, quick and practical method for direct determination of pathogens, to investigate the clues of virus, fungi or parasites infection, and, to evaluate the efficacy of treatment, especially for the non-easy cooperation children.

### Take Away Notes

- Viruses infected skin diseases in children including molluscum contagiosum, condyloma acuminatum, herpes simplex was easy to diagnoses of special characteristics under dermoscopy.
- Fungal infected diseases including tinea capitis, white piedra, tinea pedis, onychomycosis, tinea cruris, tinea corporis, pityriasis versicolor, *Malassezia* folliculitis, *Talaromyces marneffeii*.
- We observed the scabies mite with eggs in the skin tunnel, and *Phthirus pubis* all life cycle stages namely translucent empty nits, nits containing nymphs, nymph and adult phases within a single field of view.
- Using UV-dermoscopy, we traced a live *Demodex folliculorum* wandering at the rosacea skin surface of nasolabial folds.

**Biography:**

Dr. Yuping Ran got the Diploma of Dermatological Scientist, Japanese Society for Investigative Dermatology. Ph.D. of Juntendo University, Japan, in 1994. He was an International Emerging Infectious Diseases Fellow, Centers for Diseases Control and Prevention, Atlanta, USA (2002-2004). He completed the International Mycology Course, The CBS Fungal Biodiversity Centre, Netherlands (2006). He is now the Board Member of Chinese Society of Dermatology, Head of Mycology Group, Chief Scientist of Fungi Research Center (2014-). He originally discovered oral itraconazole treatment infantile hemangioma. He is specialized in infectious dermatoses of viruses, bacteria, fungi and parasites.)



## Whole Genome Sequencing as a First-Line Diagnostic Tool in Epileptic Encephalopathies

Luigi Vetri<sup>1,3</sup>, Michele Roccella<sup>2</sup>, Francesco Cali<sup>3</sup>, Maurizio Elia<sup>3</sup>

<sup>1</sup>Department of Sciences for Health Promotion and Mother and Child Care "G. D'Alessandro," University of Palermo, Palermo, Italy

<sup>2</sup>Department of Psychology, Educational Science and Human Movement, University of Palermo, Palermo, Italy

<sup>3</sup>Oasi Research Institute-IRCCS, Troina, Italy

**Objective:** Epileptic encephalopathies are a devastating group of electroclinical syndromes with early onset of drug-resistant seizures in which the epileptiform abnormalities may contribute to progressive dysfunction or developmental stagnation and consequent cognitive and behavioral impairments.

A genetic etiology can be identified in a considerable proportion of patients with epileptic encephalopathy. Most have de-novo dominant mutations, but a growing proportion of patients has a polygenic inheritance in which the interaction of several genetic variants is responsible for the phenotype.

The increased efficiency and the reduced cost of next-generation sequencing tests promoted their implementation into the routine diagnostic process. Whole-exome sequencing (WES) is a technique for comprehensively sequencing all the protein-coding regions of the genome (~20,000 genes). It has proven successful in identifying undiagnosed genetic disorders in many patients with a broad phenotypic spectrum.

**Methods:** We report our experience in the use of WES as a first-tier molecular test in 28 patients with undiagnosed epileptic encephalopathies at Oasi Research Institute-IRCCS, Troina, Italy. The test was performed on probands and their unaffected parents (trio analysis). Each genetic variant found has been compared to known variables in main polymorphism and mutation databases and a deeply in silico analysis for predicting pathogenicity was performed. All variants found were confirmed by sanger sequencing.

**Results:** about 40% of patients received a genetic diagnosis. And we have detected three new possible candidate genes for epileptic encephalopathies. Our data highlight the clinical utility and feasibility of WES in individuals with undiagnosed forms of epileptic encephalopathies.

### Take Away Notes

- I will explain what are epileptic encephalopathies
- I will delineate the role of WES in the diagnostic procedure of genetic epilepsies
- I will propose three new genes correlated to epileptic encephalopathies

### Biography:

Luigi Vetri is a physician and researcher at Department of Sciences for Health Promotion and Mother and Child Care "G. D'Alessandro," at University of Palermo. He has been collaborating for two years with Oasi Research Institute-IRCCS in Troina in the field of congenital and inborn causes of intellectual disabilities and neurodevelopmental disorders.



## “Successful outcomes with early intervention by combined comprehensive approach in treatment of Autism: A 10 years retrospective study”

Dr. Neena Shilen, M.D(PED), FAAP (U.S.A), Sr. ARYA V

Department of Developmental Paediatrics, Sunrise Hospital (A group of Sunrise Institute of Medical Sciences) Kochi, Kerala, India

This is a retrospective study of outcomes in all children with autism who received early interventions between 15 months to 3 years of age with combined protocol treatment. The study also compares the percentage of children getting similar outcomes in age groups >3 to 5 yrs., >5to 10 yrs. age groups. Relation of outcomes to severity of autism at the time of diagnosis was also assessed. It was found that the children who received early intervention with combined pharmacological, ABA, O.T, speech and nutritional therapy were close to neurotypical than who received only ABA, O.T, speech and 1;1 IEP. Patients were classified according to age with assessment of CARS score confirmed cases of autism, patient w regression of speech and severity (mild, moderate and severe) and age groups Patients with global delay, chromosomal anomalies, seizure disorder and other medical or neurological disorders were excluded from study. The most important predictor was the age of intervention and treatment protocols. The difference in optimal outcomes were 61 to 66% in 15 months to 3 years; 27 to 35% in > 3 to 5 years; and 0 to 6% years in >5to 10 years group. The combined protocol was showing significant difference in moderate and severe cases till 5 years of age. After 5 years, there was no significant difference in any treatment protocols. Other important pre determinants for successful outcomes were parental counselling, parental acceptance and regular follow up with a focal person who could explain, counsel and direct to other disciplines. For determining the long-term outcomes, the longest period of follow up was 10years and shortest period 2years.

### Take Away Notes

- Strategies used for early detection. How early should intervention start? What is in combined comprehensive treatment.
- This talk will showcase videos of patients with their outcomes, so the participants can really see the effects of early treatment. This is a reproducible model and can be acquired by other doctors and can be used to expand their research or teaching. This provides simple methods to detect autism early and a complete guide on when to start intervention, what treatments are most effective, what is the average time frame of treatment depending on severity of autism and age of intervention. It also suggests a protocol for treating autism which can be customized to each child. It will discuss the strategies to improve awareness among primary care pediatricians and simple flow chart for referral to Specialists...

### Biography:

Dr. NEENA SHILEN is a Developmental Pediatrician with 12 years of expertise in autism treatment and research. She currently serves as the Head of Department and Consultant in Department of Developmental Pediatrics at Sunrise Hospital in Kochi, Kerala, India. She earned her MBBS and M.D (Pediatrics) from Pt. JNM Medical college, Raipur, India. She has also done residency in Pediatrics in Children's National Medical Center, Washington D.C. She has also worked as a registrar in Neonatology, as Lecturer in Pariyaram Medical College and as Assistant surgeon in Govt. Health Services and certified in LEND program. She has been a clinical guide to a PhD student whose paper on "Genetic association of DNMT variants in autism", was published in 2019. Currently a clinical guide to a post doctorate fellow for A study on "Early detection of autism with analysis of MRI brain using AI and machine learning"



## Obesity among adolescents in Vellore city

Mary Anbarasi Johnson

AFHSR, Saudi Arabia

**Background of the study:** Obesity is becoming a major concern not only in developed countries but in developing countries as well. Lack of physical activity among adolescents is the main reason for obesity among all age group especially adolescents. In addition they are not provided with adequate time to participate in games and other physical activities. The natural consequences of over-nutrition, sedentary lifestyles, unhealthy eating, and wrong choices of food preferences and lack of exercise will increase the childhood obesity in developing countries like India. Unfortunately obesity in childhood tracts in to their adult life resulting in an increased risk of morbidity and mortality in adulthood. The aim of this study was to assess the effectiveness of interventional program which consisted of structured training on obesity prevention and Zumba exercise for adolescents who attend school (both private and government) from randomly selected schools in Vellore.

### Objectives of the Study wereto

Determine the prevalence of overweight and obesity in 10-18 year old school going adolescents in Vellore.

1. Assess the perception of the parent and the child about overweight/obesity, to study the effectiveness of a school based intervention program for 3 months in changing the BMI, body composition, fitness and health related behavior of adolescents aged 10-18 years as compared to the control group.
2. Determine the association between overweight, obesity and selected demographic features.
3. Determine the association between overweight, obesity and health related behavior, to reassess BMI, fitness and health related behavior of those adolescents who participated in the program (both study group and control group) 3 months after completion of the intervention.

**Methods:** The investigator after obtaining clearance from the College of Nursing, ethical committee and Institutional Review Board of C.M.C Vellore, sought permission from the Chief Educational Officer to conduct the study in the schools of Vellore city. The school principals were contacted to obtain permission and to learn the feasibility of the study methods. The prevalence of obesity among school adolescents was determined by measuring the weight, height and waist circumference. BMI was calculated from the recorded weight and height. Their body composition was assessed using a bioimpedance machine. The heart rate and blood pressure of the adolescents were assessed; physical fitness of the participants was also assessed with the assistance of the physical fitness teachers of the respective schools. The intervention which included structured training program (two sessions per month for two months and 'Zumba exercise three days a week for three months was carried on. Post intervention BMI, Body fat, Physical fitness, nutritional assessments were carried on by another trained personnel and compared with the pre interventional data.

### Data collection tools

The demographic details were filled by one of the parents (Appendix-1). The principal investigator measured the weight, height, waist circumference of the participants. Body mass index was calculated from that. The bioimpedance machine was used to assess BMI and the body fat composition. The participants' blood pressure and heart rate were measured.

The intervention was measured and compared.

A 24 hour dietary recall was done as a baseline for all study subjects by the nutritionist.

To assess the health related factors, a questionnaire with 27 questions were used, which was completed by the participants and one of the parent's (Appendix-3a).

To assess perception of over weight and obesity, a questionnaire consisting of 10 statements in Tamil and English was administered to participants and their parents.

The school based intervention program ("Zumba exercise and structured teaching sessions) was used for the experimental group and the primary outcomes (BMI) and secondary outcomes such as physical activity; eating, sleeping and sedentary behavior in children before and after the intervention was assessed.

**Validity and reliability:** The content validity of the tools had been already checked by the investigator who had done a study on obese children attending Child Health OPD in the year 2009, this study involved only teaching and no physical activity interventions. The validated tool was used for the study. (Content Validity score: 1) Reliability was checked by performing a pilot study.

**Statistical analysis:** The data was screened for outlier and extreme values using the histogram, Box-Cox plots. The prevalence of Obesity and overweight was described as percent with 95% CI based on gender and age of the participants. Perception of obesity by the adolescent and the parent was also expressed as a percentage. Independent-*t* test was used to assess the effectiveness of the intervention on the BMI, body fat, physical fitness and the risk factors including nutritional intake. Association of overweight, obesity and risk factors such as eating, sleeping and physical activity and also an association between overweight, obesity and demographic variables were assessed using chi square test.

**Results:** It was noted that the prevalence of overweight was 8.4 % and obesity was 1.9% among the subjects studied. The mean overall perception of overweight and obesity was 70% for mothers and 68% for adolescents.

The BMI of the participants reduced to 5% from the baseline after three months of intervention as hypothesized and to 2.5% after 6 months of intervention ( $p < 0.001$ ). The systolic pressure was higher among the obese adolescents.

There was a significant reduction in calorie and fat intake after the intervention ( $p < 0.001$ ). It was found the demographic features such as educational status of the mother and father, monthly family income, working status of both father and mother, eating pattern (vegetarian and non-vegetarian), area of residence and type of family had significant association ( $p < 0.001$ ). Association of overweight, obesity and risk factors such as physical activity, eating habits and sleeping habits was done and was found that there was association ( $p < 0.001$ ) in areas like –age of the adolescents, educational status of both parents, working status of both parents, eating pattern (Vegetarian/NonVegetarian intake), area of residence (urban/rural, number of siblings in the family).

**Interpretation & Conclusion:** Overweight and obesity continue to be a pressing issue among adolescents as the prevalence rate is 10.2 and 2% respectively among the school going adolescents of Vellore district. Interventional programs such as Zumba exercise and structured training was effective in reducing the BMI to 5% compared to the baseline BMI. This impact continued even 3 months after the intervention was discontinued (2.5% reduction at the 6th month after the intervention) which reveals that the school adolescents would have continued to do the Zumba exercise as instructed by the investigator. Therefore we propose that such interventions if introduced in all the schools in Vellore city at least twice a week in addition to the regularly scheduled physical education at school will be very beneficial in maintaining the BMI and physical fitness of the adolescents at the optimum level or may be modified where physical education is made mandatory for all five to six days in a week.

## Biography:

Mary Anbarasi Johnson, MSc(N), PhD (N) (submitted in 2018 out of country to defend in the university) Currently pursuing PhD in management and MBA in executive management. Professor in Pediatric Nursing, Deputy Nursing Superintendent for Quality (2014-2018) Christian Medical College and Hospital, Vellore, India. Currently, Nurse Manager, Armed Forces Hospital, Southern Region, Saudi Arabia. (2 years on leave from CMC Vellore for experience) Presented and published around 60 papers in state level, national level conferences and International Conferences. Had three years of experience in USA (2005-2008) (On leave from CMC Vellore for experience)



## Infection with HHV-5 or HHV-4 and higher risk of colorectal cancer or inflammatory gut diseases: A systematic review

Luigi Marongiu<sup>1\*</sup>, Svetlana Hetjens<sup>2</sup>, Maurizio Grilli<sup>3</sup> and Heike Allgayer<sup>1</sup>

<sup>1</sup> Department of Experimental Surgery – Cancer Metastasis, Medical Faculty Mannheim, and Centre for Biomedicine and Medical Technology Mannheim (CBTM), Ludolf-Krehl-Str. 6, 68135 Mannheim, Ruprecht- Karls University of Heidelberg, Germany.

<sup>2</sup> Department of Statistics, Medical Faculty Mannheim, Ruprecht Karls University of Heidelberg, Theodor- Kutzer-Ufer 1-3, 68167 Mannheim, Germany.

<sup>3</sup> Library, Medical Faculty Mannheim, Ruprecht Karls University of Heidelberg, Theodor-Kutzer-Ufer 1-3, 68167 Mannheim, Germany.

About 10% of all human cancers have been shown to have a microbial aetiology and, of the 11 micro-organisms recognized as carcinogens by IARC, seven are viruses. Colorectal cancer (CRC) is the second most common type of cancer worldwide. The symptoms of CRC are observed only in the late stages of cancer. Thus, a good comprehension of the risk factors associated with CRC is pivotal to improve the prognosis of this disease. Several studies have shown an association between the presence of certain bacteria and CRC. On the other hand, the relationship between viral infection and CRC remains less clear. Herein, we carried out a systematic review to determine whether the presence of viruses is associated with an increased risk of developing CRC.

We inquired six scientific literature databases for articles investigating the prevalence of viruses in CRC as well as in 'inflammatory lesions' (Crohn's disease, ulcerative colitis, and inflammatory bowel disease). We identified 229 suitable articles out of 10 089 screened. We used 218 of these articles to calculate the odds ratios (OR) of the association between a risk factor and disease; we compensated the obtained results for publication bias. The remaining 11 described the virome in qualitative terms only.

We found an association between infection with any virus and CRC (OR=1.98, 95% CI: 1.49- 2.63). CRC tissues were more likely to be infected than healthy matched tissues (ORs=4.99, 95% CI: 2.99-8.33). Infection with any member of the *Herpesviridae* family (OR=1.65, 95% CI: 1.23- 2.23) was associated with a higher risk of CRC. Further stratification showed that Human Herpes viruses (HHV) 4 (OR=2.08, 95% CI: 1.04-4.17) and 5 (OR=2.66, 95% CI: 1.80-3.93) were the most related to the diseases.

Our data showed a relationship between CRC or inflammatory diseases and infection with HHV-4 or HHV-5. Further investigation on the molecular basis of such association is needed. The virus prevalence obtained by the virome studies is also discussed.

### Biography:

Luigi Marongiu obtained a PhD at the University College London on a work related to the use of the Human Papillomavirus genome as a biomarker for the identification of cervical cancer lesions. He worked at the University of Cambridge (England) on nosocomial noroviral infections and at the University of Edinburgh (Scotland) on veterinary viruses. He is currently based at the University of Heidelberg, Faculty of Medicine in Mannheim (Germany) assessing the role of viral infections in the development of cancer and metastasis. He is combining wet lab with bioinformatics analysis to develop models that could predict oncogenesis.



## Bioconjugation chemistry strategies with new fluorescent probes for live cell imaging

Ozlem Dilek

Department of Chemistry, University of the District of Columbia, Washington, DC, USA

Small-molecule fluorescent probes have been designed to react with biomolecules in cells to be used for further early diagnosis of disease progression including cancer imaging and therapy. In order to apply fluorescent probes in live cells, their design criteria are challenging: having high stability, fast kinetics, good spectral properties (large Stokes shifts, high quantum yields, drastic changes on absorption and emission spectra) and minimal perturbation are the essential key points to be used in living systems. For example, fluorescent probes can be used to label on specific proteins by using a bioconjugation chemistry in cells and in more complex biological systems. We designed several fluorescent probes which can react with the carbonyl moiety (aldehydes or ketones) of biomolecules through a click reaction to produce a fluorescent product inside cells so that we can be able to detect several biological events in various cancer cell lines. Confocal image analysis, UV-vis and spectrofluorometric measurements were also performed to characterize these bioconjugation chemistry reactions. This presentation will be on discussing the fluorescent probe design strategies, tools and tactics for using such probes to detect biologically important chemical analytes in live cells. Development of highly specific fluorescent probes that can be cleaved or targeted, or activated upon interacting with any biological system, will have great future potentials to be used for in vivo. Our results also provide a new approach for understanding the critical importance of chemical small molecule probes that can enhance new diagnostic methods in cancer and other critical diseases.

### Biography:

Dr. Dilek studied B.Sc. and M.Sc. in Chemistry at the Middle East Technical University, Ankara, Turkey. She then completed her Ph.D. in Chemistry/Chemical Biology at SUNY-Binghamton, USA. After two years postdoctoral studies at Cornell University and SUNY institutions, she joined Istanbul Altinbas University, Medical School in 2013 and got her tenure. She returned to USA in 2017 and worked as a faculty in Husson University and University of St Joseph. She recently joined as a faculty to University of District of Columbia, Washington, DC. She has published more than 15 research articles, book chapters and presented in more than 35 national and international conferences



## Strategies to overcome multidrug resistance in cancer therapy

Marialessandra Contino<sup>1\*</sup>, Carmen Abate<sup>1</sup>, Chiara Riganti<sup>2</sup>, Stefano Guglielmo<sup>3</sup>, Giuseppe, Felice Mangiatordi<sup>4</sup> and Angela Stefanachi<sup>1</sup>

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**M**ultiDrug Resistance (MDR) is the cause of the failure of chemotherapy in different type of cancers and it is mainly due to the overexpression of efflux proteins belonging to the ABC transporters family such as P-gp, BCRP and MRP1. These proteins, by effluxing the commonly used antineoplastic drugs, not allow them to reach the cytotoxic concentration vs cancer cells, not hitting their aim. Different strategies may be used to overcome MDR. The first strategy, the mostly known, may be the development of small molecules able to inhibit the efflux activity of MDR proteins (MDR inhibitors) in order to restore the access of the common antineoplastic agents to cancer cells.

A second, more novel, strategy may be the development of agents able to use the presence of these transporters to induce cancer cells suicide inducing the phenomenon called Collateral Sensitivity (Collateral Sensitivity promoting agents).

More recent is the idea to use cannabinoid receptor 2 (CB2R) agonists to block cancer progression and the identification of this target in MDR cancers can open a new scenario for the single target therapy and also to a Multitarget Approach.

Aim of this presentation will be to show the limitation and the successful findings obtained with the first two strategies in resistant cancers and in cancer stem cells. A perspective about the use of CB2R agonist in a multitarget approach will be also discussed.

### Take Away Notes:

- The audience will know what resistance is, which is the cause of MDR and the possible adopted strategies.
- The Research interest could be great since people that work in the filed could be inspired in their research from the results obtained by other group and mainly the multitarget approach perspective could open the possibility for new collaboration between different research teams.

### Biography:

Dr Contino is a medicinal chemist with a great expertise in chemical biology. She has worked for several years for a spinoff for which she was also consultant. Recently (september, 2019), Dr Contino won an EMBO short-term fellowship to stay at the Center for Research in Molecular Medicine and Chronic Diseases (CiMUS) in Santiago de compostela, where she has dealt with different technologies (enzymatic, fluorescence- and radioactive-based) to study in vitro fluorescent probes and multitarget drugs. She is author of 86 international papers, a review book and two patents. She is Editor for Frontiers in Neuroscience and for International Journal of Molecular Science (Molecular Oncology Section).



## Induction of abnormal sperm morphology and alterations in blood parameters and histopathology of liver, kidney and testis in mice by awba dam water

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<sup>2</sup>Cell Biology and Genetics Unit, Department of Zoology, University of Ibadan, Ibadan, Nigeria

**A**wba Dam is an important source of domestic water supply in the University of Ibadan, Nigeria where anthropogenic activities such as discharge of waste from hostels and households, as well as chemicals from laboratories are channeled. There is dearth of information on the genotoxicity of Awba Dam water (ADW). Therefore, this study aimed at investigating the systemic toxicity of ADW in mice and its genotoxic effect using the murine sperm morphology assay. Male Swiss albino mice (11-15 weeks old; 4 mice/exposure periods) were exposed via drinking to ADW for 5, 10 and 15 weeks consecutively. Tapwater and cyclophosphamide (20mg/kg bw) served as negative and positive controls, respectively. Sperm abnormalities were assayed by making sperm suspensions from the cauda epididymis of each mouse and smearing them on microscope slides which were subsequently scored. The absolute organ weight (g), relative organ weight (%) and histopathological alterations were assessed in the kidney, liver and testes of the exposed mice. Serum hepatocellular injury [Alanine aminotransferase (ALT) and Aspartate aminotransferase (AST)] and haematological parameters were also assessed. The concentrations (mg/L) of lead, cadmium, chromium, copper, iron and zinc were analyzed in ADW samples. Concentrations of Pb, Ni, and Fe were significantly higher than the standard allowable limit. There was a non-significant decrease ( $p > 0.05$ ) in the absolute kidney and liver weights, with a significant increase ( $p < 0.05$ ) in the absolute testicular weight at all exposure periods. Histological lesions revealed degeneration of tubular epithelial cells; random foci of single-cell hepatocellular necrosis; but no visible lesion was observed in the testis. A significant ( $p < 0.05$ ) increase in the levels of ALT and AST, with alterations in haematological parameters were also observed. Frequency of sperm abnormalities significantly increased ( $p < 0.05$ ) at all exposure periods compared with their corresponding negative controls. Data showed that heavy metals and other unidentified chemical substances in the ADW samples induced abnormal sperm morphology and systemic toxicity in mice. This may be of health risk as Awba Dam water is an important source of domestic water supply for the University of Ibadan community.

**Keywords:** DNA damage, hepato-renal toxicity, blood parameters, genotoxicity of water, sperm morphology.

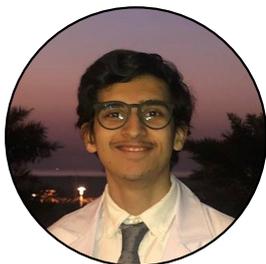
### Take Away Notes:

1. The audience will learn about the sperm morphology assay.
2. The audience will learn about the relationship between Serum hepatocellular injury [Alanine aminotransferase (ALT) and Aspartate aminotransferase (AST)] induce by my sample in mice
3. The audience will understand the urgent need to put in place effluent treatment facilities to treat waste running to the different lakes or dams from all sources

From the presentation, the audience will be able to understand and explores the potential genotoxic and systemic toxicity of untreated lakes or dams in their environment. It will also help to expand research that links toxicology to cancer.

### Biography:

Oteyola Ayodeji Ojo studied Zoology and Environmental Biology in Ekiti State University, Nigeria, and then joined the research group of Prof. Bakare in Cell Biology and Genetics in the University of Ibadan, Nigeria, where he obtained his M.Sc degree in 2018. He is presently a doctoral (PhD) student in cellular Biology, Institute of Biological Sciences, Universidade Federal de Minas Gerais (UFMG), Belo-Horizonte, Brazil. He currently has a published paper.



## The pattern of expression of human placental lactogen across normal, lactational and malignant epithelium

Raja Alyusuf<sup>1</sup>, Javed Fayyaz Wazir<sup>2</sup>, Urmil Prabha Brahmi<sup>3</sup>, Abdul Rahman Fakhro<sup>4</sup>, Zainab Abdulmajeed Toorani<sup>5</sup>, Yousef Rezk<sup>6\*</sup>

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Recent evidence on the effect of human placental lactogen (hPL) on breast cancer has been lacking in the literature. Our overall objective was to delineate the distribution pattern of hPL across mammary epithelium of varying levels of differentiation. We are the first study to convey the level of expression of hPL in human lactational change epithelium. Immunohistochemistry (IHC) for hPL was performed on archival formalin fixed paraffin embedded tissue blocks of 97 cases. These consisted of 53 invasive ductal carcinomas, 21 lactational change cases and 23 cases of normal mammary tissue. The results of this study show under-expression of hPL in malignant epithelium compared to normal and lactational groups individually and combined as a non-malignant group. A higher expression of hPL was established in Axillary lymph node (ALN) positive patients compared to negative cases. However, there was no statistically significant difference between hPL expression and tumour grade, Estrogen receptors (ER), Progesterone receptors (PR) or Her-2. Our detection of hPL in some malignant epithelium cases compared to all lactational change epithelium may provide basis for future studies on the role of hPL in the lactating cells' protective mechanism against carcinogenesis. Alternatively, our results could be explained by the proposed mechanism in the literature, which explains an inhibitory effect of breast cancer cells on the translation of human chorionic somatotropin hormone (CSH) mRNA into hPL protein. Poorer prognostic outcome of breast malignancies when hPL is expressed as presented previously in the literature could be confirmed by further studies using more clinical parameters.

### Take Away Notes:

- The audience will appreciate the pattern of expression of hPL across varying levels of differentiation, with particular emphasis on lactational change epithelium. As we are the first study to present these findings on human lactational cells, it is a valuable opportunity to compare hPL expression across normal, malignant and lactational epithelium.
- The audience will be able to explore the varying theories presented in the literature pertaining the role of hPL on breast cancer. Future research can expand the pool of evidence we have established on the expression of hPL in lactating vs malignant epithelium to provide basis for further testing of the many hypotheses regarding the role of hPL in breast cancer.
- The audience will also be available to observe the potential existence of any correlation between hPL expression and other parameters such as ALN metastases, ER, PR, Her-2 and tumour grade. This expanded pool of evidence can be used by researchers to further discover whether hPL can have a future role as a tumour biomarker in breast carcinoma. Immunohistochemical evidence may encourage future researchers to use wider clinical parameters to underline the poorer prognostic outcome of breast cancer associated with hPL expression.

**Biography:**

Dr. Raja Alyusuf is a Fellow of the Royal College of Pathologists since 1998. She is a Consultant histopathologist with special interest in the area of breast treatment. She chaired the Department of Pathology at the Salmaniya Medical Complex for 10 years after which she became the Deputy Chief of Medical Staff for Diagnostic Affairs at the Salmaniya Medical Complex. In addition, she is a part-time Associate Professor of Pathology in the Royal College of Surgeons of Ireland-Bahrain branch. She has over 20 publications in reputable journals and is a member of a number of international and national professional associations.



## Omega-3 fatty acids survey in men under active surveillance for prostate cancer: From intake to prostate tissue level

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**D**ietary omega-3 fatty acids ( $\omega$ 3), particularly long-chain  $\omega$ 3 (LC $\omega$ 3), have protective effects against prostate cancer (PCa) in experimental studies. Observational studies are conflicting, possibly because of the biomarker used. This study aimed at evaluating associations between grade reclassification and  $\omega$ 3 levels assessed in prostatic tissue, red blood cells (RBC), and diet. We conducted a validation cross-sectional study nested within a phase II clinical trial. We identified 157 men diagnosed with low-risk PCa who underwent a first active surveillance repeat prostate biopsy session. Fatty acid (FA) intake was assessed using a food frequency questionnaire and their levels measured in prostate tissue and RBC. Associations were evaluated using logistic regression. At first repeat biopsy session, 39 (25%) men had high-grade PCa (grade group  $\geq$ 2). We found that high LC $\omega$ 3-icosapentaenoic acid (EPA) level in prostate tissue (odds ratio (OR) 0.25; 95% (confidence interval (CI) 0.08–0.79; p-trend = 0.03) was associated with lower odds of high-grade PCa. Similar results were observed for LC $\omega$ 3 dietary intake (OR 0.30; 95% CI 0.11–0.83; p-trend = 0.02) but no association for RBC was observed. LC $\omega$ 3-EPA levels in the target prostate tissue are inversely associated with high-grade PCa in men with low-risk PCa, supporting that prostate tissue FA, but not RBC FA, is a reliable biomarker of PCa risk. (209/250 - 500 words)

### Take Away Notes:

- Omega-3 fatty acids, mainly eicosapentaenoic acid (EPA) were inversely related to upgrading of prostate cancer during active surveillance.
- Measuring omega-3 fatty acid exposure (or content) in the target prostate tissue made protective associations more precise than associations based on dietary intake.
- Measuring omega-3 fatty acid exposure (or content) in red blood cells was not associated with cancer risk.
- Blood-based biomarkers of omega-3 fatty acid exposure might not reflect their prostate cancer biological effect.

### Biography:

Dr. Vincent Fradet (MD, PhD, FRCSC) trained at University of Montreal and UC San Francisco and is now associate professor and clinician scientist in uro-oncology at the CHU de Québec-Université Laval and the Institute on Nutrition and Functional Foods (INAF). He also holds a doctorate in clinical research / epidemiology. Dr Fradet leads and collaborates to multicenter observational studies and clinical trials in prostate and bladder cancers. His main areas of research interest are using precision lifestyle medicine approaches, including microbiome and tissue biological measures, in urologic oncology to better prevent, diagnose and treat prostate and bladder cancers.

# POSTERS

## PEDIATRICS VIRTUAL 2020

SEPTEMBER 14-15,  
2020

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## The Problem of Candida Albicans among Children with Renal Disorders

Dr. Sirma Angelova

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In condition of an oral cavity infection caused by *Candida albicans* is stimulated the production of exo-polysaccharides. These compounds enrich the accumulated biomass and facilitate the process of adhesion of a great number of microorganisms, including representatives of the species of *Streptococcus mutans*, upon teeth surfaces. The co-infection with *Candida albicans* leads to synergetic enhancement of the virulence of the biofilm related to aggressive initiation and course of dental diseases, mainly the rampant caries.

Data based on an in vitro investigation ascertain that the extracted from glucosyltransferase exo-polysaccharide serves as a key mediator for building of a multi-species biofilm. The co-existence of *Candida albicans* with *Streptococcus mutans* induces the phenotype expression of virulent genes of *Streptococcus mutans*, respectively *gtfB*, *fabM*. Researchers ascertain that the substance of  $\beta$  1,3-glucan extracted from *Candida albicans* maintains the organization of the exo-polysaccharides' matrix structure. The fungal fractions of mannan and  $\beta$ -glucan provide surfaces for adhesion and initiation of the virulent gene of *GtfB*.

In condition of nephrotic syndrome the prolonged intake of immune-suppressor medicines has as a consequence the effect of inhibition of the activity and functionality of neutrophils and disturbance of the cells' mediated immunity. A typical clinically associated and manifested trait of that syndrome is the modification of the content of immunoglobulins, including reduction of the level of Ig G. The last correlates to the additional effect of suppression and blockage of the immune system's functionality. In terms of urinary tract infections, acute tubular-interstitial nephritis, pyelonephritis and auto-immune disorders candidiasis correlates to the intake of antibiotics and/or corticosteroids.

In the context of our study was investigated a total number of 74 participants in child's age, respectively 48 children with diagnosed pyelonephritis, 3 children with nephrotic syndrome and 23 children without common health disorders. Only among 8 of all the participants was recorded a positive result and was verified the presence of *Candida albicans* in the oral cavity. Among all the children tested for the purpose of identification of *Candida albicans* and its pathological impact upon hard teeth structures, the participants were divided as follows: 45 girls and 29 boys. A positive result for *Candida albicans* was registered among 15,56% of the female representatives of the study. Only 3,45% of all the investigated boys are characterized with identification of *Candida albicans* in the oral cavity. The greatest ratio of children with confirmed oral cavity infection of *Candida albicans*, namely 37,5 % of them, are 3- years old. The ratio of 25 % of all the positive participants includes children of the age of 4. Equal is the ratio, respectively 12,5% , of the participants at the age of 1, at the age of 5 and at the age of 6 with established positive result for *Candida albicans* in the oral cavity.

Regarding the average value of the epidemiological index of *dft*, its highest figure equivalent was recorded among the participants suffering from nephrotic syndrome, namely among 49,67% of these. This result corresponds to the established considerable number of carious lesions.

In the context of tooth decay risk assessment the role of oral candidiasis has not been thoroughly investigated yet. Simultaneously, it is accentuated upon the interrelation between these microorganisms and the intensity of total microbial production of acids. The oral cavity infection caused by *Candida albicans* carries the potential of a predictor of caries susceptibility among children.

## Take Away Notes

- The oral cavity infection of *Candida albicans* correlates to the enhanced risk of initiation and progression of the disease of tooth decay.
- The cariogenic potential of *Candida albicans* is associated to the acids production related hetero-fermentable properties of these microorganisms.
- The establishment of presence of representatives of the species of *Candida albicans* into oral cavity is in positive correlation to the state of poor oral hygiene and considerably intensified consumption of sugars.
- *Candida albicans* colonizes more frequently into the oral cavity of children who suffer from chronic common health disorders. The common health state of the organism afflicts the ecology of oral cavity environment.
- Caries risk assessment based on the age-related characteristics of the child, biological indicators, protective factors and specific clinical findings has to be established and implemented as a routine practice and an obligatory component of the regular dental examinations in condition of strict collaboration between specialists of different scopes of medicine science and practice. This corresponds to the performance of proper and adequate diagnostic, preventive and therapeutic procedures coordinated with the principles of personalized medicine cares.

## Biography

Since 2011 Dr. Angelova has been working as an Assistant-Professor at Medical University-Varna. She gained a Certificate of Specialization of Pediatric Dentistry in 2015. In 2017 Angelova gained a postgraduate degree after accomplishment of an independent research on the topic of "Caries Risk Assessment and Prevention in Children Suffering from Some Renal Disorders". In 2018 she gained an academic degree of Chief Assistant-Professor at the Medical University-Varna. In 2019 was issued the monograph entitled "Epigenetic and Genetic Aspects of Oral Health in Children with Pyelonephritis" authored by Sirma Angelova. She authored and co-authored more than 70 papers and participated in more than 50 scientific congresses.

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