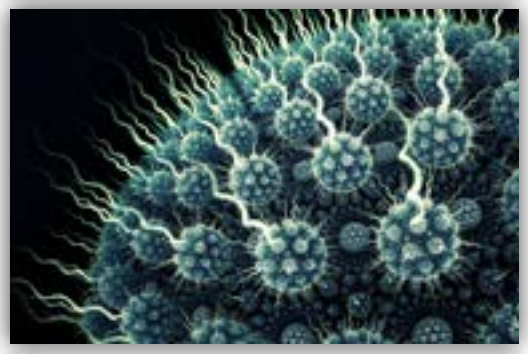
4th International Conference on

# Tropical Medicine Infectious Diseases & Public Health

September 7-8, 2017 | Edinburgh, Scotland

## Posters



# VETORIAL-ORAL AND VETORIAL TRANSMISSION OF CHAGAS DISEASE IN CHILDREN FROM AMAZON REGION, BRAZIL-THE NEED FOR NEW TOOLS TO STRENGTH THE EPIDEMIOLOGICAL SURVEILLANCE SYSTEMS

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**Introduction:** Recent environmental changes and failures designed a new epidemiological scenario for some re-emerging infectious disease in Brazil, as example, infections by Trypanosoma cruzi. Frequently described as acute Chagas disease with high morbidity, which is directly assigned to the main form of transmission (oral transmission), but almost invariable involves sylvatic vectors of the parasite with unknown behavior. New epidemiological approaches are necessary to search strategies against this emergent disease that exposes riverian and neglected populations since early ages.

**Method:** Descriptive study applied to surveillance systems to Chagas disease (CD) control in children from riverine areas of Amazon region, Brazil.

**Results:** Children with acute Chagas disease were diagnosed by parasitological and serological tests in Evandro Chagas Institute. Four children with 1 to 8 years-old were treated and had evidences of vectorial-oral transmission. All children had prolonged sick fever and half of them evolved acute myopericarditis with total resolution after treatment. None of the cases was identified during outbreaks. Entomological searches identified sylvatic vectors of T. cruzi (Rhodnius pictipes species) in their house's periphery. One mother informed us that found her child with an insect squeezed in his mouth two days before the febrile illness. The children were treated and followed for a long time. We didn´t found evidences of evolution to cardiac disease.

**Conclusion:** It is emphasized the necessary accuracy of clinical suspicion and precocious diagnosis of CD in view to eliminate the potential cardiac commitment of children in your adulthood. Insects with an unknown behavior were registered in these cases report. New epidemiological and educational tools to avoid the contact of triatomine vectors of CD and increases food security for people living in forests and riverside of Amazon areas are excellent perspectives to surveillance systems.

## Biography

Ana has a Degree in medicine by Universidade Federal do Pará (UFPa); medical training in infectious and parasitic diseases by UFPa, master's degree in Tropical Medicine. PhD degree in Tropical Medicine - Fundação Oswaldo Cruz Institute, with thesis about autochthonous Acute Chagas disease in the Amazon region, occurred by oral transmission. Public health Assistant researcher of Instituto Evandro Chagas, since 1992, experience with biomedical research applied to health sciences, with emphasis on infectious and parasitic diseases, especially Chagas disease, Malaria, Toxoplasmosis and Leishmaniasis. Main topics: Public Health in the Amazon, Tropical Medicine applied to the health of riverine populations; Chagas disease autochthonous from Amazon rainforest; responses to treatment of patients with Chagas disease; treatment and control of malaria; Parasitic diseases applied Immunology and Vaccinology; Field epidemiology and investigation of outbreaks of febrile and exanthematic syndromes. Research group: Neglected diseases and poverty causation.

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Notes:

# RELATIVE BRADYCARDIA IN SCRUB TYPHUS

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**Background:** Scrub typhus is a mite-borne infectious disease caused by Orientia tsutsugamushi. Arrhythmia is one of the reported cardiac complications and includes non-symptomatic electrocardiographic changes and serious arrhythmias such as ventricular tachycardia and Torsades de pointes. Relative bradycardia is an inappropriately low heart rate response to every 1-degree rise in body temperature that occurs in scrub typhus cases. To investigate the relationship between heart rate and temperature in patients with scrub typhus, we examined 493 febrile patients with documented scrub typhus.

**Method:** Body temperature and heart rate were recorded upon presentation, during treatment, and following symptom resolution. Fever was defined as temperature greater than 37.8°C. Febrile heart rate and temperature data were documented on initial patient evaluation, before application of antibiotic therapy. Baseline temperature and heart rate were assessed when patients first became and then remained afebrile following treatment. Although no uniform definition of relative bradycardia (RB) exists, we defined it a priori as an increase in the heart rate from a baseline of less than 10 beats/minute/°C increase in temperature. Patients exhibiting a pulse increase greater than 10 beats/minute/°C were classified as having non-relative bradycardia (NRB).

**Results:** The general relationship between heart rate and increased temperature was assessed in 493 patients with scrub typhus infection: 337 (68.4%) responded to fever with a heart rate increase <10 beats/minute/°C (RB) and 156 patients had a heart rate response ≥10 beats/minute/°C (NRB). Basal temperatures were not significantly different between the two groups. Maximal temperature was significantly higher in the RB than the NRB group. The RB group had a higher median resting heart rate than the NRB group (RB group vs. NRB group, 80.2 ± 11.5 vs. 77.2 ± 10.7 beats/minute; P=0.006). The RB group had a significantly lower heart rate than the NRB group at maximal temperature (RB group vs. NRB group, 84.6 ± 12.5 vs .00.1 ±17.3 beats/minute, P<0.001). ΔHeart rate/Δtemperature showed the opposite effect between the two groups during fever (RB group vs. NRB group, 1.17 ± 8.15 vs. 17.89 ± 8.65, P<0.001). Despite differences in the heart rate response between relative bradycardia and NRB patients, no significant differences were seen in clinical outcomes (acute kidney injury P=0.564, SIRS P=0.523, death P = 0.136) between the two groups.

**Conclusion:** Most patients with scrub typhus present with relative bradycardia. RB in scrub typhus should be included as a biomarker for differential diagnosis from other infectious diseases. In addition, relative bradycardia was not related to clinical outcomes.

## Biography

Chang-Seop Lee, currently working as an assistant professor at Chonbuk National University, Korea. His main research interests are parasitology, neglected tropical diseases, chest medicine and vector Bourne diseases.

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# EPIDEMIOLOGY OF VISCERAL LEISHMANIASIS IN BARINGO COUNTY, KENYA

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[b]Kimalel Health Centre, Kenya
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**Introduction:** Visceral Leishmaniasis (VL) or kala-azar is a disease caused by protozoan parasites of the genus Leishmania and transmitted by a bite of infected sandflies of the genus Phlebotomus .VL is fatal if left untreated. The disease is found in the arid and semi-arid regions of Kenya such as Baringo and West Pokot Counties.

**Methods:** A retrospective observational study was conducted during 7 years (2010-2016) at Kimalel Health Centre, in Baringo County. Data from patients treated at the Centre during the 7 years was analyzed for variables such as age, sex, method of diagnosis and seasonal variation.

**Results:** A total of 613 patients were diagnosed with VL and treated between 2010 and 2016. 70% of cases were diagnosed via splenic aspiration while the rest were diagnosed by rK39 rapid antibody test. 55% of all patients were below 14 years old with a predominance of males (76%). Only one case of VL/HIV Co-infection was reported during this period. There was no seasonal pattern for the disease with cases seen throughout the year. Majority of patients (75%) were treated with the combination of Sodium Stibogluconate (SSG) and Paramomycin (PM).

**Conclusion:** These results confirm that VL remains endemic in some parts of Kenya such as Baringo County. The disease mainly affects young children <14 years, and males are predominantly affected with a female to male ratio of 1:3. The most common method of diagnosis at Centre is splenic aspiration, and combination therapy is the mainstay of treatment.

## Biography

Jane Mbui graduated from The University of Nairobi, Kenya, as a Medical Doctor, with a bachelor's degree in Medicine and Surgery M.B.Ch.B. He worked at Mwingi District Hospital, Kitui County, Kenya, as an intern and rotated in Internal Medicine, Paediatrics, Surgery and Obstetrics & Gynaecology for a period of one year. He worked at Mwingi District Hospital, Kitui County, Kenya, as an intern and rotated in Internal Medicine, Paediatrics, Surgery and Obstetrics & Gynaecology for a period of one year. Thereafter, he joined Kenya Medical Research Institute (KEMRI) where he has continued his research. Presently he is working at the Kimalel Leishmaniasis Research and Treatment Center located in Baringo County, Kenya as the clinical site investigator.

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# A HISTORY OF SPECIFIC DISEASES IN THE CZECH LANDS

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In recent years, the sharp increase in scientific knowledge has significantly reduced the incidence of specific infectious diseases. However, even more perfect diagnostics and the use of more effective drugs have not been able to eradicate these diseases. At present, attention is being paid to these specific diseases, including their historical development. The presented report summarises the available information on leprosy, tuberculosis and syphilis, obtained from literary sources, and in particular from the study of direct evidence in skeletal remains from archaeological sites. Leprosy was extensive, especially in the Middle Ages. However, osteoarchaeological evidence of leprosy from the territory of the Czech Lands was only found in three cases. Therefore, in many leprosaria, patients were isolated with skin diseases, later with dermal manifestations of syphilis. Traces of this sexually transmitted disease are observed in every large modern skeletal collection. Syphilis has enforced new legislation at this time, which is of fundamental importance in the advance of healthcare. However, the mortality of the modern population has been affected even more by tuberculosis. In skeletons, it is possible to record its bone forms, which occurred in 5-7 % of tuberculous patients. Doctors currently do not ordinarily meet with a detailed characteristics of the morphological manifestations of untreated specific infectious diseases in the bones. However, it is clear that, as a result of the increasing resistance of pathogenic organisms to antibiotics and the impact of the migration of unvaccinated populations, this issue is again becoming highly relevant.

## Biography

Katerina Vymazalova at Faculty of Science of Masaryk University in Brno (MA in Physical Anthropology) and at the Faculty of Medicine of the same University (PhD in Anatomy, Histology and Embryology). Currently, she works as assistant professor in the Department of Anatomy of Faculty of Medicine in Masaryk University in Brno. She teaching seminars and dissection courses in anatomy for students of General Medicine. She lectures and teaches seminars in Anatomy of the locomotor system for Czech and foreign students of Physiotherapy. In the professional work, she deals with physical and historical anthropology focusing on paleopathology of medieval and modern populations. She is a member of Czech Anatomical Society and Czech Anthropological Society

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# PLASMODIUM BERGHEI ADHERENCE AND ENDOTHELIAL PROTEIN C RECEPTOR EXPRESSION IN EXPERIMENTAL MALARIA-ASSOCIATED ACUTE RESPIRATORY DISTRESS SYNDROME

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**Introduction:** Malaria-associated acute respiratory distress syndrome (ARDS) often results in morbidity and mortality. Nevertheless, little research has been done on ARDS. Recently, murine models have been used to study malaria-associated ARDS; however, the effect mechanism of adhesion of infected erythrocytes to murine lung endothelial cells remains unknown. The aim of this study was to elucidate the effects and mechanism of infected erythrocytes adhesion to murine lung endothelial cells and aspects of the innate immune response that will bring important contribution to the understanding of malaria-associated ARDS.

**Methods:** DBA/2 mice were infected with 106 infected red blood cells (iRBC) of Plasmodium berghei ANKA (PbA) and classified as ARDS or HP (hyperparasitemia) before death, on the 7th day after infection (dai). Perfused lungs of mice classified as ARDS or HP were collected and the EPCR, ICAM, VCAM and PbA mRNA expression was analyzed by qRT-PCR and lung tissue sections were stained with H&E to analyze the parasite localization or hemozoin concentration by polarized light. DBA/2 mice were also infected with P. berghei ANKA luciferase and analyzed in vivo on the 7th dai to identify the parasite distribution. Primary culture of DBA/2 mice microvascular lung endothelial cells (DBA-PMLEC) were stimulated with IFN- gamma (50ng/ml), TNF (50ng/ml) and mature forms of iRBC were added for 1 hour and then removed to check the capacity of iRBC to adhere to DBA-PMLEC. In addition, transwells membranes were used containing peritoneal macrophages (MΦ) or bone marrow's neutrophils (BMN) and stimulated with iRBC to analyze if soluble factors from these cells affect the capacity of iRBC to adhere in DBA-PMLEC. Dexamethasone was administered to the mice to verify the effect of the anti-inflammatory in the experimental model. Stimulated cells were collected to mRNA analyses (ICAM, VCAM, CD36 and EPCR).

**Results:** Microscopy analyses have shown the presence of iRBC in close contact with endothelial cells in lung tissue sections. Higher levels of 18s Plasmodium berghei ANKA mRNA expression and hemozoin were observed in perfused in lungs of ARDS mice compared to HP (qRT-PCR). P. berghei ANKA luciferase is distributed in the peripheral blood and tissue of DBA/2 mice but when mice were perfused, the (luciferase/luciferin) signal was more concentrated in lungs. ICAM-1, VCAM, and EPCR expression is altered in TNF-stimulated cells. IRBC-PbA in contact with MΦ or BMN increase iRBC-PbA cytoadhesion in (DBA-PMLEC) and MΦ produce TNF. Dexamethasone-treated mice have lower gene expression of VCAM, EPCR and less TNF in serum (compared to untreated controls) and die with hyperparasitemia symptoms.

**Conclusion:** Our data suggest that P. berghei ANKA infected erythrocytes adhere to DBA-PMLEC and TNF suggested modulating EPCR expression. Financial support: CAPES, CNPq and FAPESP.

## Biography

Luana dos Santos Ortolan is a biologist graduated from University Fundação Santo André, São Paulo, Brazil (2009) and has a Master's Degree in Chemical Biology from Federal University of São Paulo, Brazil (2013). She is currently a PhD candidate in Immunology at the Institute of Biomedical Sciences of the University of São Paulo, Brazil.

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# ORIGIN OF ISLAND VECTORS HELPS TO UNDERSTAND THE TRYPANOSOMA CRUZI CYCLE IN ISLANDS OF CHILE

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[b]University of Chile, Chile

In Latin America, Chagas disease is one of the most important zoonoses mediated by vectors. The etiological agent is the flagellated protozoan Trypanosoma cruzi, transmitted mainly by hematophagous insects of the subfamily Triatominae. *T.cruzi* alternates between triatomines and several mammalian host species; meantime birds and reptiles are refractory to infection. Triatomines of the *Mepraia* genus are endemic of Chile and play an important role in *T. cruzi* transmission in the wild cycle; they are potential vectors for humans. Populations of Mepraia have been reported inhabiting in islands of the north of Chile. In these areas infected *T. cruzi* specimens have been detected. These insects feed mainly on seabirds and reptiles if birds and reptiles are refractory to infection, what is the origin of the infected *T. cruzi* vectors in island areas? Suggested hypotheses are: i) The presence of Mepraia in insular areas are explained through passive dispersion by marine birds; ii) The infected Mepraia specimens are originated from ancestral habitats that were separated by vicariance. To clarify the origin of the island vectors, islands and continental specimens were captured and mitochondrial DNA genes were amplified by PCR. Nucleotide sequences were used to estimate phylogeny and dates of divergence between insular and continental populations. Results show both divergent and shared haplotypes between islands and continent. Dates of divergence are consistent with sea level changes during the Pleistocene. Results suggest that both hypotheses are not exclusive and that the origin of island vectors can be explained by dispersion and vicariance.

## Biography

Rircado Campos Soto has been Graduated from University of Chile as Medical Veterinarian, Later on he obtained his Doctor grade from University of Chile in Agricultural and Veterinary Sciences. He started a postdoctoral position at the Pontifical Catholic University of Valparaiso where he has continued his research until today.

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# SEASONAL DEPICTION OF MALARIOMETRIC INDICES IN CHILDREN UNDER FIVE YEARS OLD IN A SUDANESE SEMI-URBAN AREA OF BURKINA FASO (WEST AFRICA)

**San M. Ouattara[a], Siaka Debe[a], Sam A. Coulibaly[a], Desire Kargougou[a], Youssouf Kabore[a], Alphonse Ouedraogo[a], Amidou Diarra[a], Alfred B. Tiono[a], Issa Nebie Ouedraogo[a], Sodiomon B. Sirima[a] and Michel Vaillant[b]**
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**Background:** Malariometric parameters are indispensable for the assessment of both new therapies and control strategies. This study, in the framework of the characterization of a new malaria research site, aimed to compare malariometric indices between high transmission season (rainy season) and low transmission season (dry season) and to provide useful data for future intervention studies.

**Methods:** Two community-based cross sectional malariometric surveys (in rainy season of September 2009 and dry season of March 2010) were conducted in a semi-urban Sudanese area of Banfora (Burkina Faso) in children aged ≤ 59 months. The participants were selected from households located in the future clinical trial site based on their nearness to the local health facility. After the consent obtained from each participant representative, each participant underwent a brief clinical examination and demographic data collection. A finger prick blood sample was collected to perform malaria blood films for malaria parasite checkup and to measure the hemoglobin level. Anemia was considered as hemoglobin < 8g/dl.

**Results:** Malaria parasite prevalence was 55.24% (N = 677) in rainy season with a geometric mean of parasite density (GMPD) of 3439 trophozoites/µl against 23.33% (N=720) in dry season with a GMPD of 1368 trophozoites/µl. Plasmodium falciparum mono-infection was found in about 99% of the positive films. Gametocytemia rate was 21.71% and 6.53% respectively in rainy and dry season while spleen rate was 11.18% (N=689) in rainy season against 4.21% (N=752) in dry season. The prevalence of anemia was 19.74% in rainy season and 8.11% in dry season. All the indices in rainy season were statistically higher than those in dry season (p-value < 0.0001).

**Conclusion:** Malaria in this site is seasonal and hyper-endemic and the gap in indices between rainy and dry season is considerable.

## Biography

San Maurice Ouattara a Medical Doctor, junior scientist in early career. He have obtained his MD degree in 2012 at the University of Ouagadougou (Burkina Faso). He have been involved in a Clinical Research team as Sub-investigator. During these five years' experience, He was specifically in charge of trial patients selection, enrolment, follow up, safety reporting and patient's health care. He currently a fellow of the EDCTP-WHO/TDR Clinical Research and Development Fellowships and placed at the Luxembourg Institute of Health. His Main topics of interest are Biostatistics, Epidemiology, Malaria and Infectious diseases.

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# CLINICAL AND EPIDEMIOLOGICAL CHARACTERISTICS OF CUTANEOUS LEISHMANIASIS IN SRI LANKA

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Cutaneous Leishmaniasis (CL) caused by *Leishmania donovani* is a vector borne disease in Sri Lanka with a rising trend in prevalence. Identifying risk factors and specific clinical presentations to implement preventive strategies and early treatment is the objective of this study. A sample of 509 clinically suspected of having CL was selected consecutively from 2005 to 2015 across Sri Lanka for the study. Diagnosis was confirmed by microscopic visualization of the Leishmania amastigote from the slit skin smear. A structured questionnaire was used to identify the exposure related risk factors and a clinical examination was done to identify the lesion characteristics. Out of 509 clinical cases, 41.5% were smear positive. The study population ranged from ages 1 to 80 (mean = 34.46) and the most affected age group was 30-39. Of the smear positives, 58.85% were males while many were from the North Western and North Central regions of the country and exposed to scrub jungles. Sand fly exposure (p=0.04) and risk occupations (p=0.04) were significant risk factors. Signs of inflammation (p=0.02), lack of pruritus (p=0.02) and scaly lesions (p=0.003) were significant lesion characteristics in smear positivity. Lesions were commonly found in the face and upper limbs and were papulo-nodular in nature. Overall smear positivity among clinically suspected CL was at 41.5%. Significant risk factors for the disease were high risk occupations and sand fly exposure. Lack of pruritus, presence of scaly lesions and signs of inflammation were highly predictive lesion characteristics of CL in Sri Lanka.

## Biography

Dr. Sanura Vithana completed his primary and secondary education at the prestigious Trinity College Kandy and obtained his MBBS from the University of Peradeniya, Sri Lanka in 2017. He currently works in the Department of Parasitology in the same institution as a Temporary Lecturer. His academic interests are clinical medicine and surgery, tropical medicine and toxicology.

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# A COMPARATIVE STUDY OF FALCIPARUM MALARIA PARASITEMIA IN URBAN AND RURAL AREAS OF KARACHI-PAKISTAN

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**Introduction:** Malaria considers as a dangerous and worldwide communicable disease among dengue, tuberculosis, AIDS and HIV and is responsible to 2 million annual deaths especially in African countries. Malaria is caused by sporozoan parasites of the genus Plasmodium. There are four different species of Plasmodium are known, such as Plasmodium falciparum, P. vivax, P. ovale and P. malaria, but in Pakistan two of them (P. falciparum and P.vivax) are common. Falciparum malaria or cerebral malaria is very serious infection among four Plasmodium species because it increases the mortality rates throughout the World. This disease also related with age, sex, immunity, nutritional values, general health and socio-economic condition. The transmission of malaria is follows the bite of infected female Anopheles mosquito; the sporozoites transfer from the salivary glands of the infected mosquito and enter into the blood circulation of host and invade its hepatocytes, after asexual multiplication convert into thousand of merozoites that invade the erythrocytes and after repeat multiplication it gives schizont, some differentiate into sexual forms of male and female gametocytes that taken up by female Anopheles mosquitoes during blood meal, inside the mid-gut, the male gametocytes shows rapid division, produces 8 flagellated micro-gametes which fertilize the female macrogamete, resultant into ookinate goes to gut wall after en-cystment become oocyst which ruptures to release thousand of sporozoites that reaches to salivary glands of mosquitoes. In Pakistan Malaria belongs to the oriental eco-epidemiological type. Epidemics have occurred at 6 to 10 year's interval; about 40% of the cases were of P. falciparum in 1972-73 more common in Sindh province (64%). The main vector involved was A.culicifacies and A.stephensi, both developed resistances to an organophosphate. According to the malaria review mission report of 1998, malaria, especially caused by P. falciparum is on the increase in Pakistan.

**Study Area:** This study was conducted at different urban and adjacent rural areas of Karachi.from January 2003 to December 2004. Karachi is the largest city and the capital of province Sindh, known as main seaport and the financial centre of Pakistan, its estimated population is 13 to 15 million, it is one of the largest cities in term of population and recognized to be 10th largest urban agglomeration in the world.

**Method:** Thick and thin blood smears were examined and the thin blood smears were fixed in 100% methanol and stained in 2% Giemsa. Different stages P. falciparum were investigated under the oil immersion as well as the number of parasites/200 white blood cells (WBCs) was counted and the density of parasites per micro liter of blood was also calculated.

**Result:** Out of 2671patients from urban and 1558 from adjacent Goths including male and female of different age groups visiting different hospital, clinics and medical camps having symptoms of fever, chill, abdominal pain, vomiting and headache were examined by peripheral blood smear for the diagnoses of different species of malarial parasite (MP). The blood smear only positive for P. falciparum were included in the study while, mixed infection of P. vivax were excluded from the study. Total number of infection, positive for P. falciparum was 353(13.21%) including (7.33% male 5.87% female) & 97(6.22%) including (4.42% male 1.79% female) from urban and rural areas respectively.

## Biography

Syeda Azra Qamar has completed her PhD from the University of Karachi, Pakistan and partial work of Ph.D. was completed at the University of Arizona, U.S.A. She is currently working as an Associate Professor at the Department of Zoology, from Government College for women shahrah-e-liaquat, Pakistan. She has also accomplished BDV course from Mexico in 2003, first international training course on functional genomics applied to insect vectors of human diseases from Thailand in 2005 and Practical short course on Infectious Disease Modeling from Thailand in 2012 organized by Oxford University. She has actively participated and presented research papers in different international conferences including 1st Geneva forum at Geneva, Switzerland 2006, XI ICOPA at Glasgow, Scotland, 6th European Congress at Verona Italy, XII ICOPA at Melbourne, Australia, 4th conference of the Scandinavian-Baltic Society of Parasitology, Oslo, Norway. 2011, 15 ICID at Bangkok, Thailand, 2012, 5th Congress of European Microbiologists Leipzig, Germany, and has visited twice as a research Scholar at Pasture Institute of Iran, serving as a Reviewer for journal articles and also a Member of South Initiative for Tropical Diseases Research (SSI) from 2003 and Member of advisory board of Annals of tropical medicine and public health from 2009, She has published 10 papers in reputed journal.

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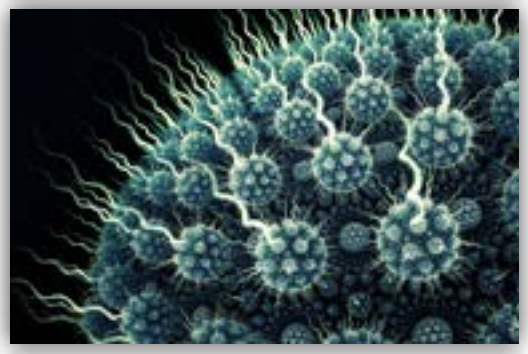
## e-Posters



# PREVALENCE AND RISK FACTORS OF *TOXOPLASMA GONDII* IN HIV/AIDS PATIENTS; A CURRENT SITUATION IN ALBANIA

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*Toxoplasma gondi*i is a single-celled parasite that causes the disease known as toxoplasmosis. In immunosuppressed (AIDS) patients, this infection can develop into fatal toxoplasmic encephalitis (TE). The study aim was to evaluate the seroprevalence of toxoplasmosis and also to identify risk factors associated with Toxo-seropositive in immunosuppressed patients. A prospective human serosurvey for toxoplasmosis was conducted at the HIV clinic in the University Hospital Center "Mother Theresa" from March 2010 to January 2017. Patients enrolled in the antiretroviral (ARV) treatment programme were invited to participate. Patient`s sera were analysed for anti-*T. gondii* IgG and IgM antibodies by NovaLisa *Toxoplasma gondi*i ELISA (from NovaTec, Germany). Results were analyzed with the aid of the software SPSS 20.0. Confidence interval (CI) 95% and adjusted odd ratio (OR) were calculated. The prevalence of infection with T. Gondii varies from 3.93% for recently aquired infection (anti-Toxo IgM) to 43.3% for past infection (anti-Toxo IgG). The average age was 39.38 ± 24.4 years with min 18 to maximum 72 years old. Multivariate analysis showed that gender difference (OR = 3.579, 95% CI [1.58 to 8.04] p value =0.0021) and presence of cats in their house (OR = 6.11, 95% CI [2.70 to 13.80] p value < 0.0001) were the only factors associated with *Toxoplasma gondi*i infection. The seropsitivity of these infection HIV-infected patients were very higher and could be at high risk of developing clinical evidence of severe toxoplasmosis. So, the screening of this community it is necessary to introduce primary behavioral practices to prevent Toxoplasma infection among HIV-infected patients.

## Biography

Erjona Abazaj is currently working as a Biologist/Parasitologist in the Laboratory of Parasitology, Institute of Public Health (IPH), Tirana, Albania where he has continued his research. She has been Graduated from 2002 as Biologist, with Diploma in Microbiology from the University of Tirana, Faculty of Natural Science, Tirana, Albania. Later in 2005 she has completed her Master`s Degree from the same faculty with subjects with gastrointestianl diseases and in 2009 she has completed her PhD with research focus centered on the recognition of Toxoplasma gondii in the Albania population by using immunological and molecular methods. Presently she is working at the at the University of Medicine in Tirana, Albania as the lecturer.

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# PREVALENCE OF NOROVIRUS AND ROTAVIRUS IN CHILDREN WITH ACUTE GASTROENTERITIS

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Gastroenteritis is one of the most common diseases affecting children and rotavirus is the major etiological agent worldwide. Noroviruses are second only to rotaviruses as causative agents of acute gastroenteritis in children. The aim of this study was to determine the prevalence and clinical features of associated gastroenteritis among hospitalized children. Overall 326 stool samples were collected from hospitalized pediatric patients with a diagnosis of acute gastroenteritis. We analyzed clinical features, hospitalization course of the patients and laboratory data. Samples were tested by ELISA antigen test for Rotavirus and Real time PCR for Norovirus. Patients with bloody or bacterial diarrhea were excluded from the study. Norovirus was the second most frequent pathogen after rotavirus, being detected in 13.8 % of the 326 enrolled children and in 10.3% of them as a single causative agent. Rotavirus was detected in 28.5% of children. Norovirus and Rotavirus infection was more prevalent in children less than 2 years of age. Vomiting and fever was present in 58% of cases. Norovirus cases were clinically indistinguishable from those of rotavirus origin. Norovirus was a frequent cause of acute sporadic gastroenteritis requiring hospitalization in Albanian children less than 5 years of age and it represents the second most common etiologic agent after rotavirus.

## Biography

Kota Majlinda has been Graduated from University of Tirana, Faculty of Natural Science in 1990 as Biologist. Later on she obtained his Master`s Degree in 2002 and PhD in 2007 from Faculty of Natural Science with subjects in Virology. She is a viorologist who works in the National Laboratory of Virology and with a university research group. Her research interests are enteroviruses, polioviruses of haemorraghic fever, Herpes viruses and Influenza viruses. Among her achievements are the contribution to polio elimination and maintenance of polio free status in Albania and also the estimation of burden of rotavirus associated gastroenteriritis which still is. Presently she has been working at the Faculty of Naural Science as the lecturer.

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# A CASE REPORT OF ECHINOSTOMA SPECIES FOR THE FIRST TIME IN NEPAL

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**Introduction:** Echinostomiasis is an infection caused by trematodes belonging to the genus Echinostoma. It can infect both humans and animals. These intestinal flukes have a three-host life cycle with snails or aquatic organisms as intermediate host and humans and other animals as definitive host. They infect the gastrointestinal tract of humans. With light infection, patient may be asymptomatic. With heavy infections, the worms can produce catarrhal inflammation and mild ulceration and the patient may experience diarrhea and abdominal pain. Infection occurs on consumption of raw or undercooked (roasted) mollusks and fish.We are reporting a case of a 62 years male from Gorkha, Nepal who presented to TUTH on July 10, 2015 with the chief complain upper abdominal pain and distension, vomiting on and off for 3 to 4 months. He has history of consumption of alcohol, roasted fish and snail and have had jaundice 3 times in the past, the recent episode of jaundice being 3 to 4 months back. Considering his symptoms of abdominal pain and jaundice, he underwent endoscopy. On endoscopy, an adult flat worm was seen in the intestine which was sent to microbiology laboratory for further evaluation.

**Method:** The adult worm was received in our laboratory and its morphological characteristics were studied. Since, the worms was small it was pressed between two slides to study its morphological characteristics. Three consecutive stool samples were collected and processed for routine macroscopic and microscopic examination. The size of the detected ova was measured using cell sensation software version 1.12 for DP73 camera installed to the Olympus BX53 microscope used for the microscopy.

**Result:** The adult worm was flat leaf like, grayish in colour measuring approximately 1 cm in length by 2 mm in breadth. Microscopic examination of the wet mount of stool sample revealed ellipsoidal, yellow-brown, eggs with somewhat inconspicuous operculum measuring approximately 130 by 70 micrometer . On the basis of morphological appearance of adult worm and characteristic feature of the detected ova and its measurement, Echinostoma species was identified. The photographic evidence of worm and eggs with the results of measurement were then forwarded to CDC (Centre for Disease Control and Prevention) which was later confirmed to be that of Echinostoma species by CDC, Atlanta. Patient was treated with praziquantel 40mg/kg (single dose), the drug of choice for Echinostoma infection and stool examination after 2 weeks did not show any ova of Echinostoma.

## Biography

Ranjit Sah is a Resident at Institute of Medicine of Tribhuvan University Teaching Hospital, Nepal. He has been undergoing researches regarding various clinical cases during his study period. He has done research on differentiation of Taenia species by simple ZN stain and the article was published in JIOM with title "Identification of Taenia in a 6 year old child". He has identified for the first time cases in Nepal like Acanthamoeba in corneal scraping of a patient with keratitis and Toxoxoplasma parasite (tachyzoite and bradyzoites) demonstrated in vitreous fluid etc

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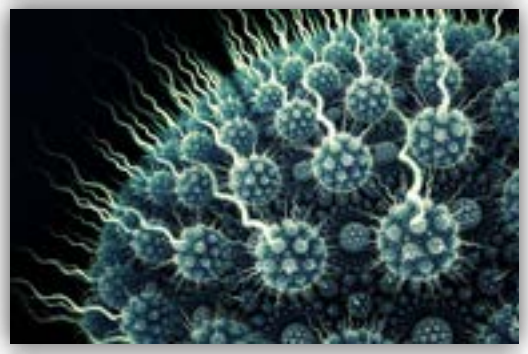
## Accepted Abstracts



J Parasit Dis Diagn Ther 2017

# HUMAN IGG ANTIBODY RESPONSE TO AEDES NTERM-34KDA SALIVARY PEPTIDE, AN EPIDEMIOLOGICAL TOOL TO ASSESS VECTOR CONTROL IN CHIKUNGUNYA AND DENGUE TRANSMISSION AREA

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Arboviral diseases are an important public health concerns. Vector control remains the sole strategy to fight against these diseases. Because of the important limits of methods currently used to assess human exposure to Aedes mosuito bites, much effort is being devoted to develop new indicators. Recent studies have reported that human antibody (Ab) responses to Aedes aegypti Nterm-34kDa salivary peptide represent a promising biomarker tool to evaluate the human-Aedes contact. The present study aims investigate whether such biomarker could be used for assessing the efficacy of vector control against Aedes.

Specific human IgG response to Nterm-34kDa peptide was assessed from 102 individuals living in urban area of Saint-Denis at La Reunion Island, Indian Ocean, before and after the implementation of vector control against Aedes mosquitoes. IgG response decreased after 2 weeks ($P < 0.0001$), and remained low for 4 weeks post-intervention ($P = 0.0002$). The specific IgG decrease was associated with the decline of Aedes mosquito density, as estimated by entomological parameters and closely correlated to vector control implementation and was not associated with the use of individual protection, daily commuting outside of the house, sex and age. Our findings indicate a probable short-term decrease of human exposure to Aedes bites just after vector control implementation.

Results provided in the present study indicate that IgG Ab response to Aedes aegypti Nterm-34kDa salivary peptide could be a relevant short-time indicator for evaluating the efficacy of vector control interventions against Aedes species.

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# DYNAMICS OF TRANSGENIC ENTEROBACTER CLOACAE-GFP-DEFENSIN IN ANOPHELES STEPHENSI UNDER LABORATORY CONDITION

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[d]Urmia University of Medical Sciences, Iran

**Background:** Enterobacter cloacae bacterium is a known symbiont of most Anopheles gut microflora and nominated as a good candidate for paratransgenic control of malaria. However, the population dynamics of this bacterium within An. stephensi and its introduction methods to the mosquitoes have not yet been explored.

**Methods:** Enterobacter cloacae subsp. dissolvens expressing green fluorescent protein-defensin (GFP-D) was used to study transstadial transmission and the course of time, larval habitat, sugar, and blood meal on dynamics of the bacterium in the mosquito life stages. The bacterial quantities were measured by plating samples and counting GFP expressing colonies on the Tet-BHI agar medium

**Results:** The E. cloacae population remained stable in sugar bait at least for eleven days whereas it was lowered in the insectary larval habitat where the bacteria inadequately recycled. The bacterium was weakly transmitted transstadially from larval to adult stage. The bacterial populations increased smoothly and then dramatically in the guts of An. stephensi following sugar and blood meal respectively followed by a gradual reduction over the time.

**Conclusion:** This study showed that E. cloacae was highly stable in sugar bait and increased tremendously in the gut of female adult An. stephensi within 24 hours post blood meal. Sugar bait stations can be used for introduction of the transgenic bacteria in a paratransgenic approach. It is recommended to evaluate the attraction of sugar bait in combination with attractive kairomones as well as its stability and survival rate in the semi-field or field conditions.

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# IS ARACHIDONIC ACID A NATURAL SCHISTOSOMICIDE?

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Schistosoma mansoni and S. haematobium infect >250 million people, yet not all people of the same community and household. Regarding rodents, mice but not rats are susceptible to infection with S. mansoni and hamsters but not mice are entirely permissive to infection with S. haematobium. A recent Brazilian publication has demonstrated that resistance of the water-rat to S. mansoni infection might be ascribed to stores of arachidonic acid (ARA) in liver. We have previously shown that ARA is a safe and effective schistosomicide in vitro, and in vivo in mice, hamsters and in children. Schistosoma haematobium appeared more sensitive than S. mansoni to We herein propose that ARA increased levels might be predominantly responsible for natural attrition of S. mansoni and S. haematobium in resistant experimental rodents. Therefore, we compared and contrasted levels of ARA in serum, lung and liver of mice (susceptible) and rats (resistant) to S. mansoni at 1, 2, 3, 4 and 6 weeks after infection with S. mansoni cercariae and between hamster (susceptible) and mice (which are not permissive) at 1, 2, 3, 4, and 12 weeks after infection with S. haematobium cercariae. Arachidonic acid levels were assessed in serum by competetive enzyme-linked immunosorbent assay, and in liver and lung sections by immunohistochemistry and transmission electron microscopy. We recorded highly significant, consistent and reproducible correlation between ARA content in serum, lung and liver and rodent resistance to schistosome infection, thereby implicating ARA as a natural schistosomicide.

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# CHOOSING SIDES: STRENGTHENING GLOSSINA ON THE STRUGGLE AGAINST TRYPANOSSOMA SPP

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Tsetse flies (Glossina spp.) are responsible for the transmission of the flagellated protozoa Trypanosoma spp. causing animal African trypanosomiasis (Nagana) and Human African trypanosomiasis (HAT). The later is endemic in 30 countries in sub-Saharan Africa and it is estimated that 60 million people are at risk of infection. Climate and environmental changes are likely to increase its incidence as well as its geographical distribution. Strategies undertaken to fight African trypanosomiasis will have to be multidisciplinary and articulated between the different components that comprise its biological system.

The development of molecular biology techniques has opened up new possibilities with respect to vector control. Despite the fact that the direct transgenesis of flies is hampered by tsetse´s adenotrofic viviparity, paratransgenesis emerged as an alternative.

In the present study, the coding sequences for the trypanocydal proteins attacin and defensin were cloned in plasmid vectors for expression in Sodalis glossinidius, an endosymbiont of Glossina spp. Thermal shock, chemical treatment and electroporation were applied for the symbiont transformation in order to express the recombinant proteins. Transformation was achieved by a combination of methods which was, for the best of our knowledge, successfully achieved for the first time. The expression of the recombinant proteins was evaluated indirectly by inhibition of E. coli growth upon co-culture with transformed S. glossinidius. The expression of attacin and defensin is now being further studied by real-time PCR and western blot. Protein purification is being attempted for the in vitro evaluation of trypanocydal effect.

J Parasit Dis Diagn Ther 2017

# EPIDEMIOLOGY OF HAND FOOT MOUTH DISEASE IN NORTHERN THAILAND IN 2016: A PROSPECTIVE COHORT STUDY

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**Objective:** To determine the correlations between the meteorological data and the number of hand foot mouth disease (HFMD) in 2016 in northern Thailand, and to estimate the medical costs.

**Methods:** A prospective cohort study design was conducted. Numbers of HFMD were collected from 49 hospital from three different provinces in northern Thailand; 16 hospitals from Chiang Rai Province, 7 hospitals from Pha Yao Province, and 26 hospitals from Chiang Mai Province. Questionnaire had been developed and tested for validity and reliability before use. The specific form to collect the meteorological data was developed and used in the filed. All information were pulled into the same data spread sheet before analysis. Chi-square and correlation were used for explaining the epidemiology of HFMD in the areas. An alpha error at 0.05 was used to determine the statistical significance level.

**Results:** A total of 8,261 cases were analyzed in the study. 56.0% were males, 96.1% were aged≤ 5 years, 97.4% were OPD cases, 75.5% were reported in raining season, and 43.2% were from Chiang Mai Province. The number of HFMD cases had statistical significant correlations with temperature, air pressure, relative humidity, and rainfall amount. Averagely, 216 baht and 3,678 baht per case per visit had to be expended for medical cost in OPD and IPD cases respectively. Most of the cases had been reported in the border areas; Thai-Myanmar, and Thai-Lao.

**Conclusions:** Thailand health care system should provide a concrete schedule for taking care of HFMD patients during raining season, and should develop an effective preventive and control program for HFMD particularly among children less than 6 years.

J Parasit Dis Diagn Ther 2017

# CONTROL OF IMMUNOPHATOLOGY DURING ACUTE ARBOVIRAL INFECTIONS

**Vincent Vieillard[a], Caroline Petitdemange[a], Christopher Maucourant[a], Nadia Wauquier[a] and Eric Leroy[b]**
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The recent explosive pandemic of chikungunya (CHIKV) followed by Zika (ZIKAV) virus infections occurring throughout many countries are the most unexpected arrivals of arthropod-borne viral diseases over the past 20 years. Transmitted through the bite of Aedes mosquitoes, the clinical picture associated with these acute arbovirus infections; including Dengue (DENV), CHIKV and ZIKAV, ranges from classical febrile illness to life-threatening disease. Though ZIKAV and CHIKV have previously been known as relatively benign diseases, the more recent epidemic events have brought waves of increased morbidity and fatality leading them to become a serious public health problem, like as currently observed with DENV. The host's immune response plays a crucial part in controlling the infection but it may also contribute to promote viral spread and immunopathology. We assess the recent developments on the immune responses, with an emphasis on the early antiviral immune responses, to understand their possible Janus-faced effects in the control of virus infection and pathogenesis. We hypothesize that several innate immune cells subsets, including NK cells, are strongly involved during acute arbovirus infections. Improving our understanding of the immune mechanisms that control viral infections is crucial in the current race against the globalization of these epidemics. The emergence of co-infections and the unprecedented increase in magnitude in morbidity and mortality during recent major concomitant outbreaks are concerning new threats which need to be closely monitored.