

## Abstracts of the 7th European Congress on Tropical Medicine and International Health

## I.4-069

**Sonographic evidence of ascites, pleuro-pericardial effusion and gall bladder wall edema may be used as non-invasive rapid diagnostic markers in subjects with probable dengue fever**V. Gupta<sup>1</sup>, M. Motla<sup>2</sup>, M. Aggarwal<sup>2</sup> and A. Goel<sup>3</sup><sup>1</sup>University of Pittsburgh Medical Center (Mercy), Pittsburgh, PA, USA;<sup>2</sup>Yashoda Hospital, Ghaziabad, India; <sup>3</sup>University College of Medical Sciences, Delhi, India

**INTRODUCTION** Dengue is fast becoming a global epidemic, however, radiographic findings of dengue fever (DF) have not yet been clearly elucidated with relation to clinical and serological findings. We analyzed ultrasonographic (USG) features of patients presenting with probable dengue fever during the outbreak of DF of 2006 in North India.

**METHODS** Case records of consecutive patients presenting to an urban tertiary care referral hospital in India with probable DF, satisfying the inclusion criteria were retrospectively included in the study. Ten individual sonographic parameters were reviewed vis-à-vis ascites, hepatomegaly, splenomegaly, gall bladder wall edema (GBWE), pleural effusion (right or left or both), pericardial effusion, pericholecystic collection, perinephric collection. Subjects who had GB wall thickness more than 3 mm as measured on ultrasound were identified as those positive for GB wall edema. The cases were then analyzed in view of their serological profile. Statistical analysis was done using SPSS version 11.

**RESULTS** One hundred and sixty-nine patients with mean age of 27.9 (+13.4) years were included in the study; male: female was 3:1. The mean platelet count of the subjects was  $57.4 \times 103/\text{cm}^3$  (+22). The most common ultrasonographic feature was ascites (126, 75%) followed by gall bladder wall edema (122, 72%), hepatomegaly (78, 46%), splenomegaly (66, 39%) and pericholecystic collection (63, 37%). Forty-eight (28%) subjects demonstrated evidence of pleural effusion on the right side, while 19 (11.2%) had bilateral effusion. None of the subjects had an isolated left pleural effusion. Twenty-seven (16%) subjects reported bleeding manifestations in the form of petechiae and 5 (3%) developed renal dysfunction. Presence of pleural and pericardial effusions was found to be specific while ascites and GBWE were identified as highly sensitive markers for seropositive primary DF.

**CONCLUSION** Ultrasonographic evidence of ascites, pleuro-pericardial effusion and gall bladder wall edema may be used as rapid non-invasive markers during outbreaks of dengue even before serological investigations become available and may not only indicate severity but also predict onset of bleeding in the form of petechiae or pre-empt renal dysfunction. The study findings can help optimize management especially in the resource restricted settings.

## I.4-070

***Culex theileri* is a potential natural vector of *Dirofilaria immitis* in Canary Islands, Spain**R. Morchón<sup>1</sup>, M<sup>a</sup>. D. Bargues<sup>2</sup>, J. M. Latorre-Estivalis<sup>2</sup>, M<sup>a</sup>. C. Pou-Barreto<sup>3</sup>, M<sup>a</sup>. del Rosario Melero-Alcibar<sup>4</sup>, M. Martín<sup>5</sup>, R. Molina<sup>4</sup>, B. Valladares<sup>3</sup>, A. Montoya-Alonso<sup>4</sup>, S. Mas-Coma<sup>2</sup> and F. Simón<sup>1</sup><sup>1</sup>University of Salamanca, Salamanca, Spain; <sup>2</sup>University of Valencia, Valencia, Spain; <sup>3</sup>University of La Laguna, Tenerife, Spain; <sup>4</sup>Carlos III Institute, Madrid, Spain; <sup>5</sup>University of Las Palmas de Gran Canaria, Gran Canaria, Spain

*Dirofilaria immitis* is the causal agent of cardiopulmonary dirofilariosis (heartworm disease). Humans are accidental host in which it causes pulmonary dirofilariosis. The infection is transmitted by several species of culicid mosquitoes in different

parts of the world that are frequently able to bite both humans and animals. In Canary Islands (Spain), dirofilariosis has been for years an endemic disease. A total of 1219 female mosquitoes were captured. The most abundant species was *Culex theileri* (52.26%) followed by *Cx. pipiens* (35.44%), *Anopheles cinereus hispaniola* (6.23%), *Culiseta longiareolata* (5.74%), and *Culex laticinctus* (0.33%). PCR was applied for the detection of larval *D. immitis* DNA in mosquitoes. *D. immitis* DNA was observed in the abdomen of one *Cx. theileri* females. Prevalence of *D. immitis* was therefore 0.082% of the entire mosquito population and 0.17% in *Cx. theileri*. A molecular identification of *Cx. theileri*, the potential mosquito vector of dirofilariosis in this zoonotic focus in Canary Islands of Spain, has been made for first time based on sequences of the 18S rRNA gene, the second internal transcribed spacer (ITS2) of ribosomal DNA and the barcode region of the cytochrome c oxidase I (cox1) gene of mitochondrial DNA, allowing a broad mosquito molecular basis for future populations genetic analyses of this important vector species. Parasitological and entomological molecular Results suggest that *Cx. theileri* is a potential natural vector of *D. immitis* in Canary Islands, Spain and implies a *Dirofilaria* transmission complexity in Southern Europe markedly higher than that considered so far.

## I.4-071

**Chikungunya virus epidemic in Madagascar: infection associated with body weight in pregnant women**N. G. Schwarz<sup>1</sup>, M. Girmann<sup>1</sup>, N. Randriamampionona<sup>2</sup>, A. Bialonski<sup>1</sup>, D. Maus<sup>1</sup>, A. C. Krefis<sup>1</sup>, C. Njarasoa<sup>3</sup>, J. F. Rajanalison<sup>4</sup>, H. D. Ramandrisoa<sup>5</sup>, M. L. Randriarison<sup>6</sup>, J. May<sup>1</sup>, J. Schmidt-Chanasit<sup>1</sup> and R. Rakotozandrainy<sup>2</sup><sup>1</sup>Bernhard Nocht Institute for Tropical Medicine, Hamburg, Germany;<sup>2</sup>Université d'Antananarivo, Madagascar; <sup>3</sup>Hôpital d'Ambositra,Madagascar; <sup>4</sup>Médecin Inspecteur de Tsiranomandidy, Madagascar;<sup>5</sup>Médecin Inspecteur de Moramanga, Madagascar; <sup>6</sup>Centre de Sante de Base Urban de Mananjary, Madagascar

**INTRODUCTION** In October 2009 an increase of fever cases at the Eastern coast was noticed and in the beginning of February 2010 the Institute Pasteur diagnosed Chikungunya virus (CHIKV) infection in a patient from the Eastern coast. The focal point of the epidemic was around Mananjary, where the epidemic reached its peak in February and abated in March. We report the retrospective assessment of reported clinical features and serological markers of CHIKV, dengue virus (DENV) and Rift Valley fever virus (RVFV) infections in pregnant women at six different geographical locations on different heights on and above sea level in Madagascar.

**METHODS AND MATERIALS** Antenatal clinics were visited between May and July 2010. A venous (EDTA-) blood sample was taken for serological screening for anti-CHIKV-IgG anti-DENV-IgG and anti-RVFV-IgG antibodies from 1244 women. Samples from Mananjary were additionally screened for anti-CHIKV-IgM and anti-DENV-IgM antibodies.

**RESULTS AND CONCLUSION** The 2009/10 arboviral outbreak in coastal south-eastern Madagascar was a CHIKV outbreak. The CHIKV-IgG seroprevalence was 45% in Mananjary and 23% in Manakara, both at the south-eastern coast. The corresponding DENV-IgG seroprevalence was 17% and 11% respectively. Only four women had RVFV-IgG antibodies. All DENV-IgM tests for samples from Mananjary were negative; the seroprevalence of anti-CHIKV-IgM was 27.5% (2–3 months after the outbreak). CHIKV-IgG-seroprevalences in altitudes between 450 and 1300 m were low (0–3%). More than a third of all pregnant women were affected in the epicentre. Data from higher elevation levels suggest that the epidemic did not spread upwards and inbound, but remained restricted to the coastal areas around the epicentre. Joint pain and stiffness was reported by 78% of the IgG-seropositives