

### Free Paper Presentation 3 – Parasitic/ Gastro-intestinal Infections

#### OL-013 Imported bancroftian filariasis: diethylcarbamazine response and benzimidazole susceptibility of *Wuchereria bancrofti* in dynamic cross-border migrant population targeted for the national program to eliminate lymphatic filariasis in Southern Thailand

Adisak Bhumiratana<sup>\*,1,2</sup>, Prapassorn Pechgit<sup>1</sup>, Surachart Koyadun<sup>3</sup>, Chumsin Siriaut<sup>1</sup>, Pisit Yongyuth<sup>4</sup>.

<sup>1</sup>Department of Parasitology and Entomology, Faculty of Public Health, Mahidol University, Bangkok, Thailand; <sup>2</sup>Environmental Pathogen Molecular Biology and Epidemiology Research Unit;

<sup>3</sup>Office of Disease Prevention and Control 11 Nakhon Si Thammarat, Thailand; <sup>4</sup>Thapput Hospital, Phangnga, Thailand

**Background:** Imported bancroftian filariasis (IBF) caused by *Wuchereria bancrofti* (Wb) in crossborder Myanmar migrant workers has been targeted for multidose diethylcarbamazine (DEC) mass treatment as part of the lymphatic filariasis elimination program at different health settings in permitted provinces. Regarding their healthseeking behaviors and migration patterns, the IBF was scrutinized for a 300mg single-dose DEC response and benzimidazole-susceptible parasite inhabiting Myanmar carriers in southern Thailand.

**Methods:** Of the 1,133 Myanmar: DEC experienced long-term migrants significantly outnumbering those short-term migrants were examined for microfilaremia (WbMf) and antigenemia (WbAg), parasite loads of 14 DEC-treated antigenemic cases: the same 7 microfilaremic and amicrofilaremic were monitored at month 0, 1, 2 and 3 to signify DEC treatment effects on infection intensity reduction. PCR and sequencing of  $\beta$ TUBA-tubulin gene retained in 7 WbMf isolates were performed to analyze two discrete exons linked with benzimidazole selection: 141bp (Phe167Tyr) and 174bp amplicons (Phe200Tyr).

**Results:** Significant 3-month antigen load reduction between the groups was pronounced (Table 1). In microfilaremic group, Mf density rebounded up to pretreatment level whereas parasite load (WbMf and WbAg) reduction did not correlate with time. Sequence analysis revealed homology of the fragments (Fig. 1) against filarial homologs deposited in genome databases, which neither point mutation was detected in all isolates.

**Conclusion:** The IBF predominantly susceptible to benzimidazole was sensitive to DEC that is still a best-buy public health in-

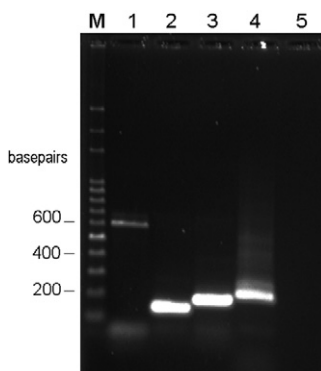


Fig. 1 Agarose gel electrophoresis of human and *W. bancrofti*  $\beta$ -tubulin gene amplification. A representative Mf+/Ag+ gDNA template shows a nested PCR pattern with the *Wbtubb* primers: lane 1, 607-bp amplicons of the 1st round PCR; lanes 2 and 3, 141 and 174 bp amplicons of the 2nd round PCR; lane 5, no gDNA; lane M, the 100-bp DNA ladder as molecular weight marker. A 210-bp fragment confined in lane 4 was yielded by following a single PCR instead using the *Hstubb* primers. Two latter exons (Gly132 to Lys174 and Val175 to Leu228) were 98-100% homologous to putative conserved domain of the filarial orthologs, which neither point mutation at position Phe167Tyr nor Phe200Tyr was detected.

Table 1. Serological response to a 300 mg single oral-dose DEC in the *W. bancrofti* antigenemic subjects, before and after treatment (months)

Group <sup>†</sup>	GM Ag load (AU/ml)			
	0	1	2	3
Mf+/Ag+ (n=7)	137090	121663	116049 <sup>‡</sup>	113345
Mf-/Ag+ (n=7)	84500	71958	57895 <sup>‡</sup>	58799
Total antigenemics (n=14)	107630	93567	81968	81637

Ag+ = antigenemic, Ag = antigen, AU/ml = antigen units per milliliters, GM = geometric mean, Mf- = amicrofilaremic, Mf+ = microfilaremic.

Significant for two-independent samples: all months<sup>†</sup>, F = 6.147,  $p = 0.029$ ; month 2<sup>‡</sup>, F = 8.375,  $p = 0.013$ .

intervention for large-scale controlling its burden in Thailand but required for both countries important vigilance of the refugia parasite.

#### OL-014 Nifuroxazide in the treatment of patients with giardiasis in the Russia

Alevtina Akatova, Elena Minchenko, Albina Yakovleva, Alfa Aminova\*. Perm Region Research Clinical Institute of Children's Environmental Pathology

Many researchers have indicated the correlation between the prevalence of giardiasis and the quality of tap water purification. Industrial toxicants' contamination may lead to the pathomorphism of lamblia infection, immunosuppression and an increase in occurrence of side effects of antiparasitic drugs.

**Objectives:** To substantiate the necessity of application of drugs with minimal resorptive and toxic effects in treatment of children with giardiasis and evaluate the clinical efficacy of nifuroxazide. A clinical trial was carried out in 1098 children (aged 1-18 years) with giardiasis. We are analyzed cause-and-effect relationships between the parameters of biochemical, immunological, hormonal homeostasis and the level of xenobiotic load. The study detected adverse effects of xenobiotics (manganese, lead, nickel, chromium, acetaldehyde, formaldehyde, acetone, etc.) on the liver function of deintoxication, their ability to cause the immune system disorders and tension of the humoral status. To efficiently eradicate the causative agent the authors applied nifuroxazide ("Enterofuril" Bosnalijek) with no resorptive effect. 38 children received enterosorbents, cholagogues and nifuroxazide ("Enterofuril" Bosnalijek) at doses of 100-200 mg as a suspension (liquid) 4 times per day (depending on age) for 7 days. Check analyses of stool samples were performed in 3-7 days after treatment. The application of nifuroxazide lead to 100% eradication of the parasite, no side effects were observed in the children. The application of nifuroxazide in patients with giardiasis living under conditions of high risk of biomedica's contamination by industrial toxicants is pathogenetically substantiated. Nifuroxazide has a significant eradication ability.

#### OL-015 A randomized open-label clinical trial with Levofloxacin, Omeprazole, Alinia (nitazoxanide), and Doxycycline (LOAD) versus Lansoprazole, Amoxicillin and Clarithromycin (LAC) in the treatment naive *Helicobacter pylori* population

P. Patrick Basu<sup>\*,1,2</sup>, Krishna Rayapudi<sup>2</sup>, Tommy Pacana<sup>2</sup>, Niraj James<sup>1</sup>. <sup>1</sup>NewYork Hospital Queens, Flushing, New York, USA; <sup>2</sup>Forest Hills Hospital, Forest Hills, New York, USA

**Introduction:** *Helicobacter pylori* (HP) gastritis is a global threat for gastric carcinoma. We evaluated Levofloxacin, Omeprazole, Alinia (nitazoxanide) and Doxycycline (LOAD) versus Lansoprazole, Amoxicillin and Clarithromycin (LAC) in treatment naive HP population.

**Methods:** 135 patients with HP gastritis or peptic ulcers were enrolled. Age: 18-65 years; Male - 75 (55.55%), female - 60

Abstract OL-015 – Table 1. Results

	LOAD-10 ARM (n=45)	LOAD-7 (n=45)	LAC-10 (n=45)
Completed therapy	42	43	42
Discontinued therapy	3 (1 - left country, 2 - abdominal discomfort and nausea)	2 (1 - dizziness, 1 - palpitations)	3 (2 - non-specific rash, 1 - nausea, abdominal pain and diarrhea)
Eradication of HP (per protocol analysis)	40 (95.23%)	41 (95.34%)	34 (80.95%)

(44.44%), peptic ulcers (healed) - 15 (11.11%), gastric erosions - 25 (18.5%), gastritis with intestinal metaplasia (IM) - 35 (25.92%), gastritis without IM - 70 (51.85%). Patients were randomized to three arms - LOAD for 10 days (LOAD-10, n=45), LOAD for 7 days (LOAD-7, n=45) and LAC for 10 days (LAC-10, n=45). Stool antigen testing for HP was performed two weeks post therapy.

**Results:** See Table 1. LOAD (all 7 and 10) versus LAC,  $p=0.0384$  (Intention-to-treat) and  $p=0.0195$  (per protocol).

**Conclusions:** LOAD is superior to LAC for treatment naive HP population. LOAD-7 is potentially cost effective and equally efficacious versus LOAD-10. LOAD-7 may be considered first line in eradication of HP infection.

#### OL-016 Viral etiology of acute infantile diarrhea in autumn and winter in Shenzhen, China

Qiong Wang\*, Yu Qiu, Xiaofang Luo, Fansheng Zeng, Xuedong Lu. Shenzhen Futian Hospital

**Objective:** To investigate the viral etiology of acute infantile diarrhea in autumn and winter in Shenzhen and compare enzyme-linked immunosorbent assay (ELISA) and polymerase chain reactions (RT-PCR or PCR) for detecting four acute gastrointestinal viruses.

**Methods:** Fecal specimens were collected from 192 outpatients less than 3 years old with acute diarrhea in Shenzhen Futian Hospital. ELISA was used to detect four viral antigen. Meanwhile, PCR was used to detect rotavirus, norovirus, astrovirus and PCR was used to detect enteric adenovirus. The PCR positive products were purified and sequenced.

**Results:** Among 192 fecal specimens, 156 specimens were identified for at least one virus with a positive rate of 81.3% (156/192) by either of ELISA or PCR, which included 119 for rotavirus (62.0%), 34 for norovirus (17.7%), 32 for enteric adenovirus (16.7%) and 6 for astrovirus (3.1%) infections and 32 for mixed infections (16.7%); ELISA and PCR did not show any significant difference for detecting four viruses ( $P>0.05$ ); These two methods showed good agreement with each other for detection rotavirus with a Kappa value of 0.58 and did not show agreement for norovirus virus, enteric adenovirus and astrovirus with a Kappa value of 0.18, 0.15 and 0.27 respectively.

**Conclusion:** RV is the dominant etiological agent of infantile diarrhea, followed by norovirus and adenovirus. The high rate of mixed viral infection deserves notice. ELISA combined PCR are a practical approach to improve diagnostic sensitivity for norovirus, enteric adenovirus and astrovirus.

#### OL-017 Relationship between *Helicobacter pylori* vacA genotypes status and risk of peptic ulcer in Saudi patients

Aiman Momenah\*. Umm Al-Qura University, Faculty of Medicine, Makkah, Saudi Arabia

**Background:** *Helicobacter pylori* is a Gram-negative organism that has the ability to induce gastric mucosal inflammation, which may progress into peptic ulcers. Persistent infection also increases an individual's risk for development of gastric adenocarcinoma and gastric mucosa associated lymphoid tissue carcinoma. Although gastritis is almost universal among infected individuals, only a minority of patients develop peptic ulcer

disease, and a very small fraction of these proceed in later life to develop gastric cancer. The aim of this work was to determine if there is a significant correlation between different *H. pylori* vacA genotypes strains and severe gastric clinical outcomes.

**Methods:** A total of 1104 gastric biopsies from 368 patients who presented with symptoms suggestive of chronic gastritis or peptic ulcer were taken from the main hospitals in the western region of Saudi Arabia from July 2004 to July 2005. These samples were cultured for *H. pylori*, and a polymerase chain reaction (PCR) was carried out to determine vacA genotypes status.

**Results:** One hundred and three (28%) patients were positive for *H. pylori* using culture technique. The distribution of vacA genotypes was 13 for vacAs1m1, 47 for vacAs1m2 and 43 for vacAs2m2. None of the clinical isolates were vacAs2m1 positive. The study showed a significant correlation between the vacAs1m2 genotype and gastritis cases, and a significant correlation between vacAs1m1 genotype and ulcer cases.

**Conclusion:** The results of this study might be used for the identification of high-risk patients who are infected by vacAs1m1 genotype *H. pylori* strains.

#### OL-018 Central chest pain: angina or *H. pylori* related acid peptic disease

Tabish Hussain<sup>\*1,2</sup>, Li Yushu<sup>1</sup>, Abbas Hayat<sup>2</sup>, Roshan Ara<sup>3</sup>, Majid Ahmad<sup>4</sup>. <sup>1</sup>Union Hospital, Tongji Medical College, Huazhong University of Sciences and Technology, Wuhan, China; <sup>2</sup>Rawalpindi General Hospital, Rawalpindi, Pakistan; <sup>3</sup>Roshan Medical Center, Islamabad, Pakistan; <sup>4</sup>Hubei College of Traditional Chinese Medicine, Wuhan, China

**Background:** Central chest pain is usually associated with cardiac events specially angina, but not always, as the rising incidence of acid peptic disease (APD) makes it confusing to diagnose exactly at first instance in emergency. Study aim was to explore the causation of chest and epigastric pain presenting in emergencies and to record APD prevalence among adult Pakistani population.

**Methods:** Study was conducted at PIMS Hospital, Islamabad from January 2007 to December 2008. 250 patients presenting in emergency with acute onset of chest pain for the first time were recruited. 67% were male. Mean age  $44\pm 5.5$  years.

Patients with known ischemic heart diseases (IHD) and APD were excluded. Patients were followed right from emergency room treatment of chest pain till their gastroscopic biopsy and histopathology for *H. pylori* in lab.

**Results:** Of total 250 patients, 73.2% (183n) were diagnosed as having clinically significant pain while 37% (67n) having psychological as fake symptoms of anxiety or depression.

Out of 73%, 39.34% (72n) were of IHD, 37.15% (68n) of APD and rest of 24% (43n) were of pulmonary or miscellaneous causations. Out of 37.1% APD cases, 91.2% (62n) were proved *H. pylori* positive on biopsy and cytology contributing big burden of chest and epigastric pain.

**Conclusion:** Rising incidence of *H. pylori* with increasing incidence of resistance to its usual therapy and concurrence with ischemic heart disease symptoms makes it difficult to diagnose and manage the patient in emergency room. Attention should be focused on complete screening and avoiding maltreatment of such problem.