is a history of YF-outbreak; and our result on entomological risk assessment foresees resurgence.

Methods & Materials: A total of 164, 085 female adult mosquitoes were caught and pool-screened using polymerase chain reaction for YF and DEN infections in two Nigerian States (Benue and Bayelsa) between 2010 and 2011. Similarly, a total of 431,381 larvae were collected in only Benue for entomological risk assessments (house, container, Breteau indices) with the determination of the transovarial status of some immature Aedes mosquitoes across studied locations.

Results: In Benue, Aedes luteocephalus, Ae. aegypti and Anopheles gambiae were positive for YF. Meanwhile no mosquito was positive for DEN virus in Benue. For Bayelsa, only Mansonia africana was positive for DEN-3 virus as against negative results of all screened mosquitoes for YF. Entomological risk indicators suggest that three (Oju, Ega and Otukpo) of the four communities surveyed in Benue are at the verge of YF-epidemic. Evidence of a possible transovarial transmission was seen in Ae. aegypti from Ega only.

Conclusion: These communities should be placed on a high alert of a possible epidemic; and so, urgent step to clear the areas of potential mosquito sites is highly recommended.

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Type: Poster Presentation

Efficacy, safety and cost-effectiveness of thermotherapy for L. donovani-induced cutaneous leishmaniasis: A randomized controlled clinical trial

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Background: The dermotrophic variant of L donovani causes cutaneous leishmaniasis (CL) in Sri Lankan patients. Standard treatment is painful, costly, repeated intra-lesional (IL) injections of sodium stibogluconate (SSG). Treatment failures are increasingly reported, hence the need to investigate alternatives. Thermotherapy is a tested treatment for L. tropica and L. major CL. Efficacy, safety and cost-benefit of thermotherapy were assessed for the first time, for L. donovani CL.

Methods & Materials: Laboratory-confirmed CL patients with single lesions were randomly assigned to (i) test group (n = 98; received a single session of radio-frequency induced heat therapy (RFHT) at 50 °C for 30 seconds) and (ii) control group (n = 115; received weekly IL-SSG until cure or 10 doses). Patients were followed-up fortnightly for 12 weeks to assess clinical response and adverse events. Cost of treatment was assessed using the scenario building technique.

Results: Cure rates by 8, 10 and 12 weeks in the thermotherapy group were 46.5%, 56.5% and 65.9% as opposed to 28%, 40.8% and 59.4% in IL-SSG group. Cure rate by thermotherapy was significantly higher (p = 0.009) at 8 weeks and (p = 0.035) at 10 weeks, while comparable thereafter. Response to thermotherapy at 8 weeks was significantly higher in females [OR 1.93 (95% CI 0.997–3.738)], papular lesions [OR 2.73 (95%CI 1.29–5.77)] and in lesions <2 cm [OR 1.95 (95% CI 0.98–3.87)] compared with IL SSG (p = 0.05, p = 0.009 and p = 0.05). No major adverse events were recorded. It was 8.8 times cheaper to use thermotherapy (LKR164.00/patient) than IL SSG in treatment of L. donovani CL.

Conclusion: A single application of thermotherapy was safe, cost-effective and convenient as compared to multiple doses of IL SSG in treatment of L. donovani CL.

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Identification and functional validation of a biomarker for the diagnosis of miltefosine relapse during visceral leishmaniasis

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Background: Miltefosine is the only orally administrable drug for the treatment of leishmaniasis. It is used as a first line drug for the Kala-azar Elimination Programme in the Indian subcontinent. But in recent years, a decline in its efficacy points toward the emergence of resistance to this drug. Knowledge of biomarkers for miltefosine resistance may be beneficial for proper selection of treatment regimen.

Microarray-based gene expression profile of miltefosine relapsed parasites over sensitive strains

Differential gene expression of A. Calpain family cysteine protease-like protein and B. hypothetical protein 2 using qualitative real time RT-PCR
Cloning, expression and immunoblotting of recombinant Calpain family cysteine protease-like protein and hypothetical protein

Methods & Materials: Splenic aspirates were collected and parasites cultured from patients relapsed after initial cure (n = 15) and successfully treated (n = 15) with miltefosine. Differentially expressed genes in cultured parasite strains of miltefosine resistant strains, obtained by DNA microarray, were further validated by real time reverse transcriptase polymerase chain reaction (RT-PCR) and western blotting after preparing recombinant proteins.

Results: Out of 7705 gene specific probes labelled on a microarray chip, 669 genes were found to be up-regulated and 470 down regulated in resistant strains. The cysteine protease-like protein of calpain family [GenBank: CBZ34784] was found significantly over expressed in resistant parasite strains both by DNA microarray as well as real time RT-PCR. Only sera from relapse patients showed presence of anti calpain antibodies through western blotting.

Conclusion: Calpain family cysteine protease-like protein can be useful as potential biomarker of miltefosine unresponsiveness.

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Endoscopic nodular gastritis with helicobacter pylori infection: An indicator of high-grade bacterial colonization and severe gastritis in children


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Background: Helicobacter pylori infection is a common and universally distributed bacterial infection. It is predominantly acquired in childhood. Endoscopic findings of antral nodularity can be seen in children much more frequently than in adults and believed that this gross change may suggest H. pylori infection and histologic gastritis. We conducted a study to assess the significance of Helicobacter pylori infection associated with endoscopic nodular gastritis (NG).

Methods & Materials: This prospective study carried out over two years period and included 468 children in whom upper digestive endoscopy was performed for gastrointestinal symptoms and gastric antral mucosal biopsy was taken. Sixty-seven children were diagnosed as having NG and were included in the study.

Demographics, clinical characteristics, endoscopic and pathologic findings were recorded. H pylori were recognized in gastric biopsy on H&E sections; a modified Giemsa stain was performed in biopsy suspicious for H pylori.

Results: The prevalence of NG in children was 14.3% (67/468) and consisted of 46.3% male and 53.7% female. Children age ranged from 3–18 years (mean age, 9.2 ± 0.4 years). The prevalence of NG increased gradually with age. H pylori infection was identified in 68/468 (14.5%) children. Nodular gastritis had a poor accuracy rate to determine H. pylori infection (sensitivity, 40.3%; positive predictive value, 39.7%) and was observed in 27/68 (39.7%) H pylori positive patients and in 40/400 (10%) H pylori negative patients. There was a significant increase in grade of inflammation, activity, atrophy, number of lymphoid follicles and H. pylori density on histologic evaluation in H pylori positive patients with NG than other groups.

Conclusion: Nodular gastritis has a poor prediction for H. pylori infection in children. Gastric biopsies should always be obtained during endoscopy in children to establish the H pylori infection. H. pylori infection in children with NG identifies cases with severe gastritis and marked bacterial colonization.

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