3. The EV71 VLPs vaccine was prepared successfully. Further efforts are needed to optimize the immune process and improve immunogenicity.

OL-007 Future treatment options for multidrug resistant and nalidixic acid resistant typhoidal Salmonellae

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Introduction: Antimicrobial resistance in *Salmonella species* is of grave concern. The timely appropriate management of typhoid fever can considerably reduce both morbidity and mortality. Since late 1980s *Salmonella typhi* has developed resistance simultaneously to all the drugs used in first line treatment (chloramphenicol, cotrimoxazole and ampicillin) and are known as multidrug resistant (MDR). Fluoroquinolones are widely regarded as the most effective drugs for the treatment of typhoid fever. Unfortunately there are reports of treatment failure with fluoroquinolones and nalidixic acid resistance (NAR) is a marker of reduced susceptibility to fluoroquinolones. Recently, azithromycin is being used as an alternative agent, but sporadic reports of resistance to these antibiotics are already being reported and third generation cephalosporins, carbapenems and tigecycline prove to be promising alternatives.
Materials and Methods: This descriptive study was carried out in the Department of Microbiology, Army Medical College, National University of Sciences and Technology, Pakistan. All the specimens received with suspicion of typhoid fever for blood culture were dealt with standard microbiological procedures. Typhoidal salmonellae were isolated and were subjected to the determination of antimicrobial sensitivity. All MDR and NAR typhoidal salmonellae were subjected to minimum inhibitory concentration (MIC) testing of ceftriaxone, cefixime, meropenem and tigecycline using E-test method. MIC 50 and 90 were calculated.
Results: Among 54 MDR and NAR isolates all of the isolates had MICs well within sensitive range for all the antibiotics used. 28 isolates were *Salmonella typhi* and 26 were *Salmonella paratyphi A*.
Conclusion: Among cephalosporins cefixime is cost effective as well has an advantage of oral dosing option, carbapenems and tigecycline a new gylcylcycline have good in vitro activity against MDR and NAR typhoidal salmonellae and they can be used as last effective resorts against such organisms where other options lag behind.

OL-008 The effects of JBP485 on expression and function of Pept1 in indomethacin-induced acute intestine injury in rats and damaged Caco-2 cells

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Bankground: To investigate the changes in expression and function of the intestinal oligopeptide transporter, Pept1, in indomethacin-induced acute small intestine injury in rats and damaged Caco-2 cells after treatment of JBP485 (a dipeptide with anti-inflammatory action).
Methods: The effects of JBP485 on indomethacin-induced intestinal histological changes, MDA levels and MPO activity, inflammatory mediators release and cell LDH-release were examined. Uptakes of Gly-sar were determined by *in vivo* oral administration, *in situ* intestinal perfusions, *in vitro* everted small intestinal sac preparations and RT-PCR and Western blot studies for determing Pept1 mRNA and protein were utilized.
Results:
1. JBP485 decreased in MDA concentration and MPO activity significantly, improved inflammatory characteristics in histochemistry and attenuated cell damage induced by indomethacin.
2. The uptake of Gly-Sar by Pept1 in indomethacin-induced rats were significantly decreased, whereas the Gly-Sar concentration in plasma in JBP485 treated rats were markedly higher than indomethacin-induced rats.
3. Indomethacin caused a significant decrease in the expression of pept1 mRNA and protein in the small intestine. When compared with indomethacin-induced rats and cells, levels of Pept1 mRNA and protein were increased after administration of JBP485.

Conclusions: JBP485 improved acute intestinal inflammation condition and cells damage induced by indomethacin. The mechanism is related to decrease the inflammatory mediators release and improve the expression and function of the intestinal oligopeptide transporter (Pept1). JBP485 might be a new therapeutic agent for acute intestinal injury.

OL-009 Role of *Giardia lamblia* infection in the pathogenesis of gastritis in patients with dyspepsia in Upper Egypt

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Background: *Giardia lamblia* parasite is the most common protozoal infection in human. Concomitant *Helicobacter pylori* (*H. pylori*) and *Giardia lamblia* infection is common for their similar mode of transmission and strong correlation to socioeconomic levels. Only few reports had described gastric giardiasis. Our aim was to detect *H. pylori* and *Giardia* in gastric antral mucosal biopsies from patients with dyspepsia. The impact of both pathogens on clinical, endoscopic and histopathogical changes was studied.
Methods: 48 patients with dyspepsia (group1) and 28 control patients (patients undergoing esophagogastroduodenoscopy EGD for reasons other than dyspepsia), (group 2) were studied. Endoscopic data were reported and gastric biopsy specimens were obtained for subsequent PCR assay for both organisms and for histopathological and electron microscopic examination.
Results: Endoscopic antral gastritis and duodenal lesions were found in both groups, however, they were significantly more frequently in group 1 ($p = 0.002$ and $P = 0.0005$ respectively). Esophageal lesions, nodular antral gastritis, gastric ulcers and superficial corpal gastritis were found only in group 1.
PCR detected *H. pylori* infection in 58% Vs 64% for group 1 and group 2 respectively (P: NS). *Giardia* infection was present in 67% Vs 42% for group 1 and group 2 respectively ($P = 0.0003$, Odds ratio = 2.6). Co-infection with *H. pylori* and *Giardia* was present in 33% of group 1 Vs 36% for group 2 (P: NS).
Abnormal histologic findings were found in both groups, however, intestinal metaplasia was found in group 1 only. Cellular abnormalities in the form of cytoplasmic vacuoles, mitochondrial destruction or nuclear abnormalities were found by Electron microscopic study in infected subjects of both groups.
Conclusion: *Giardia lamblia* is an important pathogen in patients with dyspepsia in Upper Egypt. Its contribution might be a factor in the persistence of symptoms after *H. pylori* eradication.