Methodology: This study utilized an observational analytical cross-sectional study and recruited a sample of expatriate employees. Participants completed a questionnaire; and provided a stool sample. Fecal specimens were analyzed for a range of IPI species using microscopy, Ziehl–Neelsen stain, and polymerase chain reaction (PCR) techniques.

Results: 25% of participants harbored intestinal parasites; 15% with protozoa, while 10% had helminths infection according to microscopy diagnosis. Higher incidents of protozoa and helminths infection were identified using PCR.

Conclusion: IPI can be found in more than quarter of the survey population and this conclusion shed a light on the importance of this study in understanding the pattern of IPI infection and transmission in the UAE.

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Prevalence and associated risk factors of intestinal parasites (Helminths and Protozoa) amongst Labors in Al Ain and Abu Dhabi

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Background: United Arab Emirates is a multicultural country and approximately 65% of the population are expatriates from low- and middle-income developing countries that have a high burden of intestinal parasitic infections (IPI).

Aim: The primary aim is to estimate the prevalence of, and factors associated with IPI in an occupational sample of expatriates in Al-Ain and Abu Dhabi.

Methodology: This study utilized an observational analytical cross-sectional study and recruited a sample of expatriate employees. Participants completed a questionnaire; and provided a stool sample. Fecal specimens were analyzed for a range of IPI species using microscopy, Ziehl–Neelsen stain, and polymerase chain reaction (PCR) techniques.

Results: 25% of participants harbored intestinal parasites; 15% with protozoa, while 10% had helminths infection according to microscopy diagnosis. Higher incidents of protozoa and helminths infection were identified using PCR.

Conclusion: IPI can be found in more than quarter of the survey population and this conclusion shed a light on the importance of this study in understanding the pattern of IPI infection and transmission in the UAE.

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Susceptibility Pattern among Carbapenem-Resistant Enterobacteriaceae isolated from Food Handlers working in Kuwait

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Keywords: Enterobacteriaceae; carbapenem resistance; community; colonization

Background: Multidrug-resistant Enterobacteriaceae is a common cause of healthcare- and community-associated infections. Resistance to the carbapenems has attracted worldwide notoriety. Carbapenem-resistant Enterobacteriaceae (CRE) are particularly problematic given the frequency with which they cause infections, high mortality and the potential for wide spread transmission of resistant strains via mobile genetic elements.

Purpose: To determine CRE prevalence and their susceptibility pattern among food handlers.

Methodology: Rectal swabs were collected from 405 Food handlers. Enterobacteriaceae isolates were identified and tested against 21 antimicrobial agents using E-test. Interpretation was done according to the CLSI (2017).

Results: Microbiological cultures yielded 679 Enterobacteriaceae species that were isolated, 36 (5.3%) of which were CRE. A breakdown of the CRE isolates were: Escherichia coli 15 (41.7%), Klebsiella pneumoniae 8 (22.2%) and Enterobacter cloacae 3 (8.3%) and others 10 (27.8%). Resistance to Ampicillin and Cefotaxime was 89% and 36%, respectively. Around 60% of the CRE were resistant to Tetracycline, Cephalothin, Amoxicillin/clavulanic acid. However, rresistance to Colistin was 39%, these isolates included E. coli, 7 (46.7%); K. pneumoniae, 1 (12.5%); E. cloacae, 1 (33.3%); and 5 (35.7%) other species. All isolates were susceptible to Aminoglycosides and Piperacillin/tazobactam except Serratia marcescens (n = 1) and Klebsiella pneumoniae (n = 1), respectively. Resistance to Ciprofloxacin and Tigecycline was 5.6% and 8.3%, respectively. All the CRE isolates were MDR and 30.6% were positive for the production of extended-spectrum beta-lactamases. **Conclusion:** Unexpectedly Ciprofloxacin resistant is very low in comparison to other studies. CRE isolates were highly resistant to Cephalosporins and Tetracyclin. Resistant to Colistin is emerging explosively in our community necessitating continuous surveillance studies.

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Rubella virus seroprevalence and associated factors among non-vaccinated pregnant women in Northwest Ethiopia

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Background and Purpose: Rubella virus infection during pregnancy is associated with adverse fetal outcomes and reproductive failures. In Ethiopia, little is known about the extent of the diseases and there is no rubella vaccination and antibody. The main aim of this study was to assess the sero-prevalence of the rubella virus infection and its associated risk factors among pregnant women.

Methods: Institution based cross-sectional study was conducted in the antenatal clinics of Debre Markos and Debre Tabor hospitals of Amhara Region, Northwest Ethiopia from March to June 2015. About 5 ml of blood sample was also collected from all study

subjects and Immunoglobulin (Ig) G and IgM antibodies against rubella virus infection was checked using enzyme immune assay (EIA) test at Amhara Regional Health Research Laboratory Center, Bahir Dar. The collected data was analyzed using SPSS version 21 and frequencies, chi-square tests and Odds Ratio was computed and p value < 0.05 was taken as a level of significance.

Result: A total of 401 pregnant mothers were screened for rubella virus infection. The mean age of the study participants was 26.39 year (SD = 5.39) and the overall sero-prevalence of rubella anti-IgG was 46.4%. In connection, the sero-prevalence of anti-IgM among anti-IgG sero-positive cases was 3.2%. Pregnant women at first trimester (OR = 2.49, 95% CI = 1.14–5.42) and HIV sero-status (OR = 0.33, 95% CI = 0.15–0.76) were factors found to be significantly associated with rubella anti-IgG sero-prevalence (p < 0.05).

Conclusion: The sero-prevalence of rubella virus infection among the pregnant women was considered to be low showing the high risk of a new infection. Despite adopting a comprehensive approach to surveillance and effort to determine rubella susceptibility profile among school-aged girls and women of childbearing age, it is also important to consider rubella vaccine in a national vaccination program.

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Phenotypic and genotypic characterization of carbapenem- resistant Enterobacteriaceae from Saudi Arabia and Bahrain

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Background and Purpose: Carbapenem resistant Enterobacteriaceae (CRE) is a worldwide emerging public health threat. These gram-negative rods are predominantly associated with nosocomial and systemic infections which are difficult to treat and control since they are resistant to numerous antibiotic agents. Carbapenemase production is presently the most important mechanism of carbapenem resistance in Enterobacteriaceae and believed to be primarily responsible for the increasing spread of CRE. Different genotypic and phenotypic methods exist for the detection of carbapenemases; however, each has a limitation. Recently, the CLSI guidelines suggest utilizing mCIM assay. We aim to evaluate the performance of mCIM test in detection of carbapenemase activity in Enterobacteriaceae in reference to molecular methods and to determine the common carbapenemase genes at King Fahad Specialist hospital (Saudi Arabia) and Salmaniya medical complex (Bahrain).

Methodology: A total of 110 non-duplicate clinical isolates of Enterobacteriaceae, were tested by the mCIM assay and the performance was compared with multiplex PCR designed to detect the five common carbapenemase genes (KPC, VIM, IMP, NDM and OXA-48).

Results: All of the isolates had one of the common carbapenemase genes. The sensitivity of the mCIM is 97.3% with 95% CI of (0.916–0.992). Only 3 of the isolates were mCIM false negative. The results indicate that in Bahrain and Saudi Arabia, OXA-48 is the dominant carbapenemases among Enterobacteriaceae followed by NDM, with low prevalence of VIM.

Conclusions: Carbapenem–resistant Enterobacteriaceae are important pathogens in GCC region and worldwide potential threat. Klebsiella pneumonia OXA-48-type carbapenemase-producing Enterobacteriaceae is the most common member in Enterobacteriaceae which usually resistance to carbapenems and many other antimicrobial agents. Our results confirm that the mCIM test is a simple tool for the reliable confirmation of carbapenemase activity in Enterobacteriaceae, especially in clinical microbiological laboratories with limited resources.

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Detection of β-Lactamase Enzymes using conventional and Molecular Methods

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Resistance to antimicrobials is a serious clinical problem, with more than 70% of the bacteria that cause hospital-acquired infections resistant to at least one of the drugs that are currently used for the treatment of infections. β-Lactam antibiotics remain the most commonly used antibacterial agents in the present chemotherapeutic armamentarium, and β-lactamases, the enzymes that hydrolyze β-lactam antibiotics are the major cause of bacterial resistance to these compounds. Many different detection methods for β-lactamases can be used; nitrocefin test, Phenol red method, Iodometric method, and Double-Disc Test. 97 beta-lactam resistant bacterial strains 50 E.coli and 47 as Klebsiella pneumoniae were studied. The Combined disc method, Etest ESBL strips, Phenol red method, Iodometric method, and nitrocefin tests were performed for the confirmation of the presence of beta-lactamase genes. DNA extraction of the resistant strains was performed, followed by polymerase chain reaction test (PCR) for detection the presence of TEM and SHV β-lactamase genes. Eighty strains gave positive results for Etest ESBL strips, combined disc method, Phenol red test, Iodometric test, and nitrocefin tests, while 17 strains gave negative results. 8 strains (4 E.coli & 4 Klebsiella pneumoniae) were positive for TEM gene and SHV gene; 27 strains (14 E.coli & 13 Klebsiella pneumoniae) were positive for TEM gene only; 28 (15 E.coli & 13 Klebsiella pneumoniae) strains were positive for SHV gene only; while 34 strains (17 E.coli & 17 Klebsiella pneumoniae) were negative for the two genes.

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Sensitive and less invasive confirmatory diagnosis of visceral leishmaniasis in Sudan using loop-mediated isothermal amplification (LAMP)

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Background: Confirmatory diagnosis of visceral leishmaniasis (VL), as well as diagnosis of relapses and test of cure, usually requires examination by microscopy of samples collected by invasive means, such as splenic, bone marrow or lymph node aspirates. This causes discomfort to patients, with risks of bleeding and iatrogenic infections, and requires technical expertise. Molecular tests have great potential for diagnosis of VL using peripheral blood, but are expensive, require well-equipped facilities and trained personnel. More user-friendly, and field-amenable options are therefore needed. One method that could meet these requirements is loop-mediated isothermal amplification (LAMP) using the Loopamp™ Leishmania Detection Kit, which comes as dried down reagents that can be stored at room temperature, and allows simple visualization of results.

Methodology/Findings: The Loopamp™ Leishmania Detection Kit (Eiken Chemical Co., Japan), was evaluated in the diagno-