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-