

Vulnerable groups to dengue infection among the population of Jeddah, Saudi Arabia

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Objectives: Since 1994, dengue fever is an endemic disease in Jeddah, Saudi Arabia. The following study investigates the distribution of dengue cases in Jeddah among different population groups.

Study design: This is a cross-sectional descriptive study.

Methods: A secondary data collection approach was utilized in this study. The dengue datasets (patient registries) for a five-year timeframe were analyzed quantitatively. The dengue cases were classified into four different groups according to their gender and citizenship. Then a descriptive analysis and the Chi-square test were performed.

Results: For five years (2011–2015), the highest case rate of dengue cases was recorded in 2013 (the overall case rate=114 cases/100k people), and the lowest case rate was recorded in 2012 (the overall case rate=26 cases/100k people). The group who has the most reported cases was the immigrant men (Non-Saudi males) with 1148 (48.3%) cases in 2011, 507 (51.2%) cases in 2012, 2,381 (54.0%) cases in 2013, and 2,194 (69.9%) cases in 2015.

According to the Chi-square results, the difference between all four groups in 2015 was statistically significant ($P < 0.0001$). Also, the variation between the count of Saudi and non-Saudi cases was statistically significant across all studied years, according to the Chi-square results ($P < 0.0001$).

Conclusions: The findings indicate that the dengue case rates in Jeddah significantly fluctuated from year to year and among different groups regarding gender and citizenship status. The most vulnerable group to dengue is the non-Saudi male population in Jeddah with a case rate of 159 cases/100k people as in 2015. Jeddah health authorities are urged to focus on empowering immigrant workers through more health education programs and improving the current application of dengue infection control measures in housing and work environments.

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Prevalence of HPV infection in two cities in Eastern Province of Saudi Arabia

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Background: At present, there is little information on the prevalence HPV in Saudi Arabia. Cervical cancer levels are low compared to other countries, but women with cervical cancer are often at an advanced stage in which they require intensive chemotherapy and radiation treatment, due to the lack of a national screening programme. In this study, we studied the HPV positive rate in two cities in Saudi Arabia and also compared the performance of Xpert HPV test to the HC2 High-Risk HPV DNA Test.

Materials/methods: Cervical cells were obtained for Pap smear specimens from 168 women attending Johns Hopkins Aramco

Healthcare (Dhahran) and 343 women attending Qatif Central Hospital (Qatif). Each sample was tested by Xpert HPV test and HC2 High-Risk HPV DNA Test.

The proportion of positive-negative results was compared by chi-squared analysis. The McNemar chi-squared test was applied to test the statistical significance of the discordance between the tests; $P < 0.05$ was accepted as significant. We also calculated the percentage agreement between the two methods using the Kappa statistic.

Results: In Dhahran, of the 168 samples, 134 (79.8%) were from Saudi patients. The hc2 test was positive in 33 (19.6%) of the total patients, 20% among Saudi patients, and 17.6% among non-Saudi patients. Xpert HPV produced positive results in 30 (17.8%) of the samples.

In Qatif, The Xpert HPV test was positive in 27 (7.9%) of the samples. The HC2 High-Risk HPV DNA Test was positive in 32 (9.3%) of the samples.

Conclusions: We have shown that HPV infection rate was higher in Dhahran city. Xpert HPV test can be used directly on cervical cell samples and shows good agreement with HC2 High-Risk HPV DNA Test. Thus Xpert HPV test can be conveniently performed directly on Pap smear samples to generate a result within an hour.

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Clinical cure with ceftriaxone versus ceftaroline or ceftobiprole in the treatment of Staphylococcal pneumonia: a systematic review and meta-analysis

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Background/Purpose: Ceftriaxone is an empiric antibiotic commonly used to treat pneumonia. However, its use to treat infections caused by methicillin-susceptible *Staphylococcus aureus* (MSSA) may be controversial given limited evidence of its clinical efficacy. The objective of this study was to compare the clinical efficacy of ceftriaxone to either ceftaroline or ceftobiprole in the treatment of pneumonia caused by MSSA.

Methods: We conducted a systematic review and meta-analysis of randomized clinical trials (RCTs) comparing clinical cure in patients with pneumonia who received ceftriaxone versus those who received either ceftaroline or ceftobiprole. Patients who received ceftriaxone plus vancomycin were excluded. The PubMed, EMBASE and Cochrane Library databases as well as clinical trial registries were searched until June 8, 2018. Risk differences (RDs) with 95% confidence intervals (CIs) were estimated using a random-effects model and assessing for heterogeneity (I^2).

Results: A total of five RCTs met the inclusion criteria, four used ceftaroline and one used ceftobiprole. Four studies included adults and one included pediatrics. The adult studies included non-intensive care unit patients with mild to moderate community-acquired pneumonia. Clinical cure was statistically lower with ceftriaxone (RD, -0.285 ; 95% CI, -0.535 to -0.034 , $P = 0.026$, $I^2 = 16.321\%$) than with ceftaroline or ceftobiprole.

Conclusion: Ceftriaxone use was associated with higher clinical failure of MSSA pneumonia compared to ceftaroline or ceftobiprole. This supports the notion that ceftriaxone is not an ideal agent for the treatment of MSSA infections and added a new evidence against its use for MSSA pneumonia.

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