SUMMARY

Background: The study was prompted by the search for a test which could be equal to or better in diagnostic accuracy than quantitative urine culture, but less expensive or complex in the detection of asymptomatic bacteriuria among pregnant women.

Objective: The objective of the study was to establish whether the diagnosis of ASB in pregnancy by dipstick urinalysis among booked ANC women at Plateau State Specialist Hospital Jos was comparable to urine culture as gold standard.

Design: The study was a facility-based descriptive cross-sectional study. The sampling method was non-probability convenience sampling.

Subjects: This consisted of 124 pregnant women who presented for antenatal care visits. They were between the ages of 17-43 years and gave informed consent.

Methods: With the aid of a questionnaire patients who were screened into the study had their socio-demographic data and relevant current and past medical history recorded. A physical examination was carried out measuring their temperature, eliciting for lower abdominal tenderness, renal angle tenderness and noting the fetal heart sounds. Urine samples for urinalysis and urine culture were obtained using the clean catch mid urine technique. A positive leukocyte esterase test of; +, ++ or ++++, equivalent to leucocytes counts of 25 WBC/µm, 75 WBC/µm or 500 WBC/µm respectively and/or a positive nitrite test was considered a positive test for dipstick urinalysis and a single colony count of $10^5$ was considered significant for urine culture.
Results: The prevalence of ASB by urine culture was 26.6%, and the prevalence by dipstick urinalysis was 13.7%. *Escherichia coli* was the most frequently isolated pathogen n = 22 (66.7%) followed by *Staphylococcus aureus* 9 (27.3%), then *Proteus spp* 1(3%) and *Klebsiella* 1(3%). The number of times patient had sexual intercourse in the preceding week was found to be associated with ASB in pregnancy by dipstick urinalysis. An increasing gestational age was found to be associated with ASB in pregnancy by urine culture. The result of association between dipstick urinalysis and urine culture showed a statistically significant association between these two (p-value 0.01). Using urine culture as a gold standard, the statistical indices of disjunctive pairing of dipstick urinalysis (LE or nitrite) were prevalence, 13.7%; sensitivity, 36.4%; specificity, 94.5%; PPV, 70.6%; NPV, 80.4%; and accuracy, 79.0%, while that of the conjunctive pairing of dipstick urinalysis (i.e both nitrite and LE positive) were prevalence, 2.4%; sensitivity, 6.1%; specificity, 98.9%; PPV, 66.7%; NPV, 74.4%; and accuracy, 74.2%.

Conclusion: A disjunctive pairing (i.e dipstick positive when either nitrite or LE or both are positive) is most suggestive of ASB when dipstick urinalysis is used as a screening test in pregnancy than the conjunctive pairing of dipstick urinalysis (i.e both nitrite and LE being positive). For poor resource settings, the use of a disjunctive pairing of dipstick urinalysis would be favoured because of the beneficial effect of treating more women for ASB and the relatively lower risk of treating patients who are false positive results.