A-08: Preliminary report of pitfalls in the diagnosis of urinary tract infection

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The objectives of this study were to determine: (a) the accuracy of urine culture in diagnostic laboratories in Sri Lanka (b) to devise non-costly changes to improve the diagnostic accuracy of urine culture reports.

In the routine method Midstream urine transported to the laboratory in "sterile" penicillin bottles, was used to inoculate a suitable medium with a 5 mm nichrome wire loop. The colony count after overnight incubation was multiplied by 50 for the final count.

In an alternative procedure, empty nifedipine bottles, (40 ml screw capped) to which 0.45g boric acid was added, were used after autoclaving.

Semiquantitative counting using a 0.001 ml loop and quantitative count by a pour plate technique were carried out and results reported as No growth (NG), No significant growth (NSG) ($1\text{-}10^4$ organisms/ml) and significant growth ($>10^5$ organisms/ml).

Of 89 urine samples examined 16 (18%) had a significant count using the pour plate method, only 8 (50%) of which gave a significant result using the routine method. In contrast, of 73 samples which would either have been reported as NSG or Ng using the pour plate method, 3 were reported as having a significant count by the routine procedure.

The low sensitivity (50%) and specificity (73%) of the routine procedure compared with the pour plate method could be accounted for by the use of penicillin bottles (with residual penicillin interfering with bacterial growth) and long delays in transport and inoculation. The use of easily available screw capped autoclavable containers to which 1% boric acid is added will improve the diagnosis of UTI without serious additional cost to the procedure.