

00299 The Epidemiology of Urinary Tract Infection in a Singapore Teaching Hospital: Results of an Audit of Urine Cultures

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Aims: We aimed to describe the epidemiology of UTIs in NUH.

Methodology: A cross sectional study was conducted on 110 NUH patients being screened for a randomized clinical trial of short course treatment of CAUTI. Patient data were extracted using a standardized data collection form. A random sample was clinically interviewed in person to validate the accuracy of medical records. Statistical analysis was performed using Student's t-test, Fisher's exact test and chi-squared test.

Result: 54% samples were from male patients with similar ethnic distribution to Singapore. 40/110 urine culture samples were positive and the patients tend to be older (67 ± 19 vs 60 ± 16 , $p=0.048$). 42 bacteria were isolated, the commonest being *Klebsiella pneumoniae* ($n=12$, 29%) and *Escherichia coli* ($n=11$, 26%). We noted a higher antimicrobial resistance in the hospital acquired organisms. In UTI patients, the Tmax is significantly higher (38 ± 0.80 vs 38 ± 0.91 , $p=0.044$), with $RR=2.3$ (1.3-3.8 95% CI). There is a marked percentage of them having abnormal urinary WBC count (82% vs 29%, $p=0.00011$ two tailed FET). Other laboratory markers such as peripheral WBC, CRP, and procalcitonin were not statistically significant.

22/59 males and 10/51 females had IDC ($RR=1.9$, 1.0-3.6 95%CI, $p=0.058$). Both groups had similar percentage of patients with bacteriuria ($RR=1.0$, 0.61-1.8, $p=1$). Abnormal urinary WBC count may suggest bacteriuria in catheterised patient ($RR=3.4$, 1.5-7.4 95%CI, $p=0.0036$). Interestingly, fewer proportion of IDC patients with bacteriuria (vs no bacteriuria) had abnormal peripheral WBC (40% vs 81%, $p=0.046$ two tailed FET).

Conclusion: Urine cultures are widely used in hospitals. A significant proportion are positive for a range of antimicrobial resistant organisms although few are symptomatic. There is need for novel strategies to reduce the use of IDCs and also for good stewardship of diagnostic testing to prevent over treatment and antibiotic resistance.