64.025
Cost and Infection Control Implications of Inappropriate Urine Bacterial Cultures

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Hypothesis: Urine culture in unselected individuals with negative urine dipstick is unwarranted. Physicians often order urine cultures inappropriately, resulting in false positive cultures and unnecessary antimicrobial use.

Methods: Retrospective review of patients who had positive urine culture despite negative dipstick from Jan-Mar 2006. Data were collected on patient demographics, past medical history, presence of urinary symptoms, and documentation of request and results of urinalysis, urine culture and treatment given.

Results: 4977 urine specimens were received of which 1570 (31.5%) were negative on dipstick but processed for culture by order of the physician. 113 (7.2%) of these resulted in a positive urine culture. Ninety-seven charts were available for review. The mean age was 28 (median 25, range 1–87). Suspected urinary tract infection was listed as a reason for culture in 45/97 (46.4%) patients. Only 18/68 (26.5%) had urinary symptoms (excluding 29 preschool aged children). The order for urine culture was not recorded in 37/97 (38%) and result was not documented in 64/97 (66%) of patients. 29/97 (30%) received antibiotics for a total of 285 DDD (Defined Daily Doses) (average 9.8 DDD/patient). A total of 254 DDD of antibiotics were prescribed for which no clear indication could be established from the medical record. Estimated excess material cost to the microbiology laboratory in absence of sieving strategy for urine culture was estimated at $1030/month.

Conclusions: We found poor documentation of reasons for urine culture and results by physicians. In addition, in a majority of cases no clear reason could be found for dispensation of antibiotics other than a positive urine culture. Introduction of positive urine dipstick as a sieving strategy for urine culture in low risk patients would reduce inappropriate antibiotic use and lower laboratory costs.

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64.026
Molecular and Phenotypic Characterization of Metallo-Betalactamases Producing Bacteria in a Tertiary Care Hospital

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An ongoing outbreak of bla IMP-4 positive Gram negative rods in the Neonatal intensive care unit prompted us to look at improved screening for these organisms using a mix of phenotypic and molecular methods. These organisms present a challenge to the routine microbiology laboratory because of variable phenotypic expression, the range of organisms involved and the need for rapid results. As this genetic element is relatively new a greater understanding of the problem in our local environment was required. As such 3 groups of isolates were studied.

A total of 300 none duplicate consecutive gram negative clinical isolates were recovered from the department of Microbiology, Nepean hospital, Western Sydney were selected for the study. The 300 isolates comprised of 100 isolates sensitive to third generation cephalosporines and aminoglycosides, 100 isolates resistant to either or both of the drugs and 100 isolates collected from Neonatal intensive are unit where it was thought an ongoing out break of MBL positive bacteria was occurring. Historical specimens from early in the outbreak was reviewed.

The bacterial isolates were identified to the species level and antibiotic susceptibility testing as performed by Vitek 1 system(Biomerieux). Isolates were subjected to phenotypic testing using MBL inhibitors, 2-mercaptopyrroionic acid and EDTA.

The real time PCR was performed using Corbett rotor gene 3000. The primers were designed by primer 3 software targeting the IMP4 gene in order to shorten the product size and make the detection by Syber green a possibility. The expected size of the amplicon was 192 bp. Product specificity was assessed by the melt curve and confirmed by product sequencing. bla IMP-4 was found to be present in up to 40% of our neonatal screening isolates but was not found frequently in specimens from patients outside the unit. We discuss a suggested approach to screening for IMP4 metallo-beta1actamases in a hospital setting.

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64.027
Enterococcus Infections: Epidemiology, Mortality and Risk Factors in a Regional Hospital in Greece

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Background: Enterococci are an important source of infection in hospitalized patients, especially in elderly individuals with several comorbidities.

Objective: To study the epidemiology and resistance of enterococcus strains that were isolated from inpatients at the Department of Internal Medicine, Argos General Hospital, Argolis, Greece.

Material-methods: During the period from 23/11/04 to 21/10/07 a total of 24 different strains were isolated from urine, blood and sputum samples from 22 patients. Identification and susceptibility testing was performed using the BacT/ALERT analyzer and the VITEK 2 compact automated (MIC) system, BioMerieux. RESULTS Fourteen (58.3%) of these strains were identified as E. faecalis and 10 (41.7%) as E. faecium. Ten (45.5%) of the patients were men and 12 (54.5%) women. Their mean age was 81.6 years old (range 63–87). The mean length of their hospital stay was 14.3 days. Their mortality rate was 27% (6 patients). Almost 82% of the patients had at least one risk factor for enterococcus infection: 13 (59%) had an indwelling urinary catheter, 10 (45.5%) had received antibiotic treatment for >7 days, 9 (40.9%) were immunocompromised (malignancy, neutropenia, corticosteroid use etc). Bacterial antibiotic resistance