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Loss of appetite and strength in the geriatric population – Diagnostic symptoms for dengue

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Objective: To demonstrate the prevalence of anorexia and asthenia, with a lack of fever, being diagnostic symptoms for dengue in the elderly in an endemic region.

Design and Methods: Ten patients who were IgM positive for dengue were reviewed. Data collected were examined for the correlation between symptoms and diagnosis. Rapid Dengue Test kits were used to test venous samples. Only symptomatic patients were tested.

Results: Of the ten patients, 80% presented with loss of appetite and 90% with weakness, whereas only 10% had a chief complaint of fever. All the patients who were tested were IgM positive.

Conclusion: Based on the data, it was determined that physicians should test for dengue if geriatric patients, in an endemic region, present with anorexia, asthenia and no fever.

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Microbial contamination and a disinfection intervention at the University of Guyana

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Objective: To investigate and compare the level of microbial contamination in the washrooms of the University of Guyana and to evaluate a disinfection intervention.

Design and Methods: A total of 65 washrooms were selected and the areas within them were swabbed including the sink, sink tap, recess under the rim, toilet seat/rim, toilet handle and urinal. Samples were also collected using Nutrient Agar settle plates to determine the level of contamination in the air around the toilets. Eight disinfectants were evaluated against *Salmonella sp* and *Bacillus sp* to determine their efficacy, and the four that were the most effective and economical were used in an intervention to clean 15 washrooms.

Results: Overall, 14 of 65 (22%) washrooms had > 100 colony-forming units (CFUs) and female washrooms were significantly more contaminated than males ($p < 0.05$). The moist surfaces, such as the sink and recess under the rim, had the most microbial growth. Of the non-bleach based disinfectants, Pine Sol[®] was the only one that had an effect against *Bacillus sp*, however, bleach was effective against both bacteria. Marvex bleach[®], Clorox Clean Up[®],

Pine Sol[®] and Clorox Toilet Bowl Cleaner[®] were selected and a reduction in growth was noted immediately after the intervention.

Conclusions: Some of the washrooms were heavily contaminated but the disinfection intervention was scientifically proven to have worked well and has been recommended to the University Administration. The results indicated the priority areas for immediate disinfection and highlighted the need for urgent rehabilitation and proper maintenance of the washroom facilities.

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Urine microscopy: Meeting the gold/beating the gold

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Objective: To compare phase contrast microscopy examination of urine and urine cultures with videoclips used as an independent traceable referee.

Design and Methods: Urine samples sent to the microbiology laboratory were examined using phase contrast microscopy. Samples were videotaped simultaneously. The microscopic examinations were coded as positive, negative or indeterminate based on the recognition of bacteria in the specimens. Urine culture results for these samples were obtained. A comparison was performed between the interpretation made by phase contrast microscopy and those of urine cultures. Statistical analysis was performed. Video recordings were then examined and classified as positive or negative based on the presence or absence of microorganisms. Concordance-discordance testing was performed comparing video images now used as the traceable gold standard separately against phase contrast interpretations and urine cultures for each sample. Statistical analysis was then repeated and the results compared.

Results: Phase contrast examination attained high standards of sensitivity, specificity, positive and negative predictive values when compared to urine cultures. When videoclips were used as a traceable referee method, microscopy interpretations were able to attain higher sensitivity and negative predictive values than the cultures while having lower specificity and positive predictive values.

Conclusions: Phase contrast microscopy has high validity when compared with urine cultures. Using a traceable videoclips as the standard, microscopy meets the gold and beats the gold.

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Effectiveness of the leukocyte esterase and nitrite urine dipstick screening tests for detection of bacterium in patients with suspected uncomplicated urinary tract infections at Georgetown Public Hospital Corporation

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Objectives: To compare reagent strip testing (nitrite and leukocyte esterase) with microscopy and culture in identifying significant bacteria and to assess the most frequent pathogens responsible for urinary tract infections (UTIs) in patients at Georgetown Public Hospital Corporation (GPHC).

Design and Methods: A prospective study was conducted on 40 urine samples: 20 with high microbial count (3+ or 4+) and 20 with low microbial count (1+ or 2+). Samples were further grouped into urinary nitrite/leukocyte esterase (NIT/LE) negative and NIT/LE positive. These urine specimens were then inoculated on cysteine lactose electrolyte deficient (CLED), MacConkey and Blood agar plates and incubated for 24 to 48 hours aerobically. Where significant bacterial growth was observed, biochemical tests were used to identify the organisms.

Results: The majority (18/20) of the positive dipstick tests had significant bacterial growth while 2/20 of the negative dipstick tests had a high bacterial growth when cultured. Among 18 positive cultures, nitrite was only present in three specimens (16.6%), leukocyte esterase in 15 (83.3%), pyuria in eight (44.4%) and significant bacteria in 13 (72.2%). *E coli* was the most common organism isolated (n = 5, 26%). The leukocyte esterase (LE) test had a total of three false negatives and five false positives, while the nitrite test had 15 false negatives with no false positives. The dipstick nitrite and LE test had a sensitivity of 16.7% and 83.3%, respectively, and specificity of 100% and 73.3%, respectively.

Conclusion: Although urine dipstick analysis can be helpful, false positives and false negatives can affect urine testing; it is recommended that UTI be confirmed with a urine culture.

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An epidemiological study of ventilator-associated pneumonia in a tertiary hospital in Trinidad and Tobago

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Objective: To determine the prevalence, risk factors and preventive measures for ventilator-associated pneumonia (VAP) at the Eric Williams Medical Sciences Complex (EWMSC), a tertiary hospital in Trinidad and Tobago.

Design and Methods: This was a prospective observational study carried out in the Adult and Paediatric Intensive Care Units (ICU) of the EWMSC for a 60-day period from May to June 2013. Thirty patients were enrolled and monitored for development of VAP until their discharge, transfer, or death. Standardized questionnaires were used to identify preventive strategies to determine the VAP knowledge base of the ICU nurses. Clinical pulmonary infection scoring system (CPIS) was used to establish VAP diagnosis. Data entry and analysis were done using Microsoft Excel 2011.

Results: There was zero incidence and prevalence of VAP at the EWMSC; hence no risk factors could be independently identified. Intensive care units nurses were observed to stringently implement VAP preventative strategies in spite of their limited knowledge of VAP.

Conclusion: Ventilator associated pneumonia does not appear to be much of a clinical complication in the ICUs at the EWMSC in Trinidad and Tobago, which may signify that the healthcare practices, including infection control, in these ICUs are adequate.

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Haemodialysis catheter infection in Kingston, Jamaica

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Objective: To determine the prevalence and common causative agents of haemodialysis catheter infection (HDCI) in Kingston, Jamaica.

Design and Methods: A retrospective cross-sectional study examined the medical records of catheter-dependent patients in Kingston (August 2008 to August 2010). A checklist was used to collect data on demographics, catheter type, site and infections for patients in one hospital (public) unit and three non-hospital (satellite) units. Data analyses allowed computation of frequency and demonstration of the relationship between duration of catheter usage or sites and infection.

Results: Data were extracted from 125 records (F = 53.6%; 68.8% > 44 years old). Most (76.6%) patients had been on haemodialysis for < 3 years, and 32% < 6 months.

The majority (98.4%) initiated haemodialysis using a catheter (tunnelled 50.8%, subclavian 41.8%, internal jugular 41.6%). Almost half (46.4%) of the patients developed at least one episode of HDCI; hospital admission

rate 44%. The commonest causative agents of HDCIs were *Staphylococcus aureus* 16.3%, coagulase negative *staphylococcus* 14.6% and diphtheroid 11.2%.

Conclusion: This study indicated that HDCI is a major concern among end stage renal disease patients in Kingston, Jamaica. The two commonest causative agents were similar to international studies, while the third agent was dissimilar. This study did not reveal association between HDCIs and catheter duration or site. These findings can guide further research and the development of best practices in the management of haemodialysis catheter-dependent patients.