ported. In a study of 242 healthy pigs in Italy four of five VTEC isolates obtained were of serogroup O101 (H types 14 (n = 1) and H- (n = 3)) (14). This case demonstrates that VT2e-producing VTEC may cause HUS in humans. The clinical importance of this toxin could be determined by characterising Vero cytotoxin genes in studies of non-O157 VTEC.

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References


Distribution of Coagulase-Negative Staphylococci, Including the Newly Described Species Staphylococcus schleiferi, in Nosocomial and Community Acquired Urinary Tract Infections

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Four hundred and four coagulase-negative staphylococci were isolated from 4905 urine specimens obtained from 4192 inpatients and outpatients. The distribution of the strains was as follows: 193 Staphylococcus epidermidis (47.8 %), 171 Staphylococcus saprophyticus (42.3 %), 29 Staphylococcus haemolyticus (7.2 %), 5 Staphylococcus warneri (1.2 %), 3 Staphylococcus

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schleiferi (0.7 %), 2 Staphylococcus hominis (0.5 %) and 1 Staphylococcus simulans (0.2 %). All three Staphylococcus schleiferi strains were isolated from inpatients: a 64-year-old female, a 68-year-old male and a 3-month-old male with colony counts of 468,000 cfu/ml, 324,000 cfu/ml and 764,000 cfu/ml respectively. These findings show that among coagulase-negative staphylococci, Staphylococcus schleiferi, a newly described species of coagulase-negative staphylococci not previously reported as a uropathogen, may also cause hospital acquired urinary tract infection.

As a group, the staphylococci are among the microorganisms most frequently isolated in a hospital microbiology laboratory. The procedure for identification of the staphylococci is often limited to a rapid screening test for Staphylococcus aureus and non-Staphylococcus aureus isolates are simply reported as coagulase-negative staphylococci (CNS). In fact, these CNS isolates include a variety of species and many different strains (1). Since the CNS constitute a major component of our normal microflora, especially of the skin, these organisms formerly were considered to be saprophytes or organisms of low pathogenicity for humans. However, several species of CNS are now documented to be opportunistic human pathogens. In the last decade there has been a marked increase in documented infections caused by CNS, especially with the growing use of invasive medical procedures and indwelling devices (2). Although CNS have been implicated in certain human infections, they are generally regarded as contaminants, and their clinical significance is questioned. CNS often are isolated from urine specimens, frequently in amounts usually considered significant, but in most cases are dismissed as contaminants (3, 4). Urinary tract infections (UTI), the most common bacterial infections of the hospital and the community, are encountered in all areas of medicine. The aim of this study was to investigate the isolation rate of CNS at the species level in community and hospital acquired UTI.

Materials and Methods. Urine specimens from inpatients and outpatients were inoculated onto Trypticase soy agar containing 5 % defibrinated sheep blood by the flood-plate method which involves pipetting a volume of urine onto a plate and incubating the plate aerobically at 35°C for 24–48 h. After colony counting, the catalase test was applied to the bacteria identified as gram-positive cocci on Gram staining and the KOH test. Catalase-positive cocci were distinguished from micrococci on the basis of their resistance to bacitracin (0.04 U disc), susceptibility to furazolidone (100 µg disc) and fermentative acid production from glucose in an oxidation-fermentation test. On the basis of tests for coagulase activity, positive organisms were classified as Staphylococcus aureus and negative organisms as CNS. CNS species were identified on the basis of the following characteristics: typical colony size and pigment, hemolysin activity, slide coagulase test, resistance to novobiocin (5 µg disc) and polymyxin B (300 U disc), nitrate reduction, esculin hydrolysis, heat-stable nuclease, ornithine decarboxylase, urease and oxidase tests, acetoin production, arginine utilization, beta-galactosidase and alkaline phosphatase activity, and aerobic acid production from trehalose, mannitol, mannose, maltose, sucrose, xylose, cellobiose, lactose, arabinose, raffinose (2).

Four hundred and four strains of CNS were obtained from 4905 urine specimens. Of the 404 patients, in whom CNS were isolated, 289 (71.5 %) were female and 115 (28.5 %) male. Of the 404 urine specimens, 350 (86.6 %) were taken as midstream urine, 42 (10.4 %) through an indwelling catheter and 12 (3.0 %) with a sterile plastic bag. Of the 404 strains, 294 (72.8 %) were from outpatients and 110 (27.2 %) from inpatients. Significant bacteriuria traditionally defined as a colony count of $10^6$ cfu/ml or greater, may be defined differently depending on the clinical setting and the manner in which a specimen is collected (5, 6). In our study, the criteria for defining significant bacteriuria were as follows: $> 10^2$ cfu/ml in a symptomatic woman; $> 10^3$ cfu/ml in a symptomatic man; $> 10^5$ cfu/ml in an asymptomatic individual; $> 10^2$ cfu/ml in a catheterized patient; and any growth of bacteria on suprapubic aspiration in a symptomatic patient.

Results and Discussion. The distribution of the 404 isolates identified as CNS was as follows: 193 Staphylococcus epidermidis (47.8 %), 171 Staphylococcus saprophyticus (42.3 %), 29 Staphylococcus haemolyticus (7.2 %), 5 Staphylococcus warneri (1.2 %), 3 Staphylococcus schleiferi (0.7 %), 2 Staphylococcus hominis (0.5 %) and 1 Staphylococcus simulans (0.2 %). Four hundred and four CNS were isolated from the urine cultures of 381 patients.

All three Staphylococcus schleiferi strains were isolated from inpatients. The first patient was a