

Coagulase-Negative Staphylococci Isolated in the Laboratory Have Antibiotic Resistance

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Introduction:

Coagulase-Negative Staphylococci (CoNS) are bacteria that dwell as commensals on human and animal skin and mucous membranes. *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, and *Staphylococcus saprophyticus* are frequently identified in biological samples, either alone or in combination with other bacteria. They can be potentially pathogenic when isolated from immunocompromised patients such as: HIV positive, cancer chemotherapy, hemodialysis, diabetics, etc. They are among the first pathogens responsible for bacteremia in neutropenic patients typically carrying venous catheters in hospitalised patients [3] of all the bacteria responsible for an opportunistic infection. Microbiological and epidemiological criteria must recognise their role in the infectious process. CoNSs can acquire antibiotic resistance by acquiring plasmids and/or transposons since the emergence of antibiotic resistance [4-6]. A CoNS strain's antibiotic resistance can be a decisive factor in its pathogenicity. As a result, we embarked on a project whose goal was to assess the role played by the CNS in bacterial infections at Fann's CHNU and to define their antibiotic resistance profile.

Keywords: : Antibiotics • Coagulase-Negative Staphylococci • Pathogenicity • Resistance.

Methods:

From April 1, 2018 to March 31, 2019, a prospective study was conducted to collect data on biological samples received at Fann's CHNU bacteriology laboratory in Dakar. Classical bacteriology techniques were employed, and antibiotic susceptibility testing was carried out in accordance with the Antibiogram Committee of the French Society of Microbiology's recommendations (CA-SFM 2016) All isolates were subjected to broth mating experiments to see if the CTX-M or PMQR markers could be transmitted through conjugation.

Result:

We found 86 CoNS strains, with *S. epidermidis* accounting for 45.3 percent (n=39) and *S. saprophyticus* accounting for 54.7 percent (n=47). Three strains (3.5 percent) of *S. epidermidis* were found to be resistant to all beta-lactams (methicillin resistant), while four strains (4.7 percent) of *S. saprophyticus* were found to be methicillin-resistant. We found 39 strains of *S. epidermidis*, of which three (3.5%) are resistant to all aminoglycosides (KTG phenotype), while four (4.7%) of the 47 strains of *S. saprophyticus* are KTG phenotype. Vancomycin susceptibility was found in all CoNSs strains

Discussion:

In our Dakar hospitals, we know very little about the role of the CoNS in bacterial infections. They're routinely isolated in the lab from pathological products, but they're rarely thought to be the cause of bacterial infections.

CoNS are major opportunistic infections, and methicillin resistant coagulase negative staphylococci have emerged as a leading cause of bacteremia in neutropenic patients who often use central venous catheters.

Conclusions:

As a result of the rise in antibiotic resistance and the frequent isolation of pathological products in the CoNS laboratory, we've discovered that they can cause bacterial infections and acquire antibiotic resistance, as our research shows.

In the clinic, the pathogenic role is determined by the infection site, immunological state, pure culture, and resistance phenotype.

To reduce contamination by CoNSs, strict adherence to aseptic guidelines throughout care and sample collection is critical. As a result, even in immunocompetent people, they can be implicated in infections