

Title: Multidrug-Resistant *Staphylococcus Capitis*: An Emerging Challenge in Clinical Settings Found in Adult Patients in Saudi Arabia



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Abstract:

The study reveals crucial information on *S. capitis*, a potentially dangerous bacterium that can cause sepsis in hospitalized adult patients, including its frequency and patterns of drug resistance which could significantly contribute to the existing body of knowledge in this field. This retrospective study was conducted in the King Fahad Medical City (KFMC), Riyadh, Saudi Arabia, from June 2019 to November 2022. The comprehensive data collection and analysis provide valuable information on the prevalence of *S. capitis* in different infection sites, antibiotic sensitivity profiles, and the association with patient demographics.

Furthermore, this study raises concerns about the high rates of methicillin resistance observed in *S. capitis* isolates, emphasizing the urgency in tackling antibiotic resistance and promoting judicious antibiotic prescription practices. Moreover, the identification of a decreased susceptibility to vancomycin as a potential explanation for its reduced effectiveness in treating *S. capitis* infections adds a crucial aspect to the discussion of treatment options and underscores the need for alternative therapeutic strategies

Methods

The present retrospective investigation was conducted between June 2019 and November 2022 at the King Fahad Medical City (KFMC) in Riyadh, Saudi Arabia.

Results

A total of 219 *S. capitis* isolates from hospitalized patients with sepsis tested positive. Infection was most common in venous blood (139 patients, 63.5%), followed by central blood (24 patients, 11%). Other locations included venipuncture (48 patients, 21.9%) and cerebrospinal fluid (three patients, 1.4%). The results highlight the clinical significance of *S. capitis* as a major contributor to sepsis, especially in male patients, and emphasize the need for appropriate antibiotic selection for effective treatment.