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STAPHYLOCOCCUS AUREUS NASAL COLONIZATION IN DIABETICS AND NON-DIABETICS IN KENYA: A COMPARATIVE STUDY
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Introduction: People living with diabetes mellitus – in comparison to non-diabetics - are considered to be immunosuppressed thus increasing their risk for nasal colonization by *S. aureus*. Post-colonisation infections are complicated by MRSA strains, increasing morbidity and mortality rates. The International Diabetes Federation (IDF) reports indicate Kenya's increasing trends of this lifestyle disease hence a higher infectious disease risk in diabetics. To establish a baseline groundwork, our study sought to explore the hypothesis investigating a potential difference in the carriage of *S. aureus* in diabetics and non-diabetics in Kenya.

Methods: 378 nasal swabs were collected between May 2022 and February 2023 and subjected to standard clinical bacteriology processing techniques. Collected data was used to analyze carriage rates, carriage predictors and susceptibility profiles.

Results: *S. aureus* positive diabetics accounted for 28%, while non-diabetics at 21% (p-value = 0.15). Being a 36- to 55-year-old diabetic was positively associated with *S. aureus* nasal colonization (p-value = 0.033, O.R = 2.34, 95% C.I 1.07 – 5.09). The antibiotic sensitivity patterns of selected drugs of *S. aureus* isolates from diabetics relative to non-diabetics was as follows: Oxacillin (71% vs 77%), Clindamycin (77% vs 83%), Tetracycline (69% vs 75), Gentamicin (88% vs 95%), Ciprofloxacin (87% vs 88%) and Vancomycin (100% vs 100%).

Discussion: There was no statistically significant difference in the carriage rates of *S. aureus* between both groups. The MRSA prevalence in both groups was low and the absence of resistance to last line anti-staphylococcal agents bodes well for antimicrobial stewardship efforts.

Conclusion: The effective management of blood glucose levels could be key in lowering the

nasal colonization rates in diabetics as the difference in both groups was not statistically significant. The diversity of MDR-MRSA strains provides evidence of increasing antimicrobial resistance, necessitating screening and nasal decolonization policies to prevent infections of nasal origin.

Key words: S. aureus, nasal carriage, diabetes, antimicrobial resistance, Kenya