SCIENTIFIC MEDICAL CLINICAL AFFAIRS

schülke

Research Compact

Tags MDRO, Octenisan nasal gel, Octenisan wash lotion, resistance, adaptation

Title

Chlorhexidine and octenidine use, qac genes carriage, and reduced antiseptic susceptibility in methicillin-resistant Staphylococcus aureus isolates from a healthcare network.

Authors Htun HL., Hon PY., Holden MTG., Ang B., Chow A.*

*Corresponding author: Department of Clinical Epidemiology, Office of Clinical Epidemiology, Analytics, and Knowledge (OCEAN), Tan Tock Seng Hospital, Singapore, Singapore

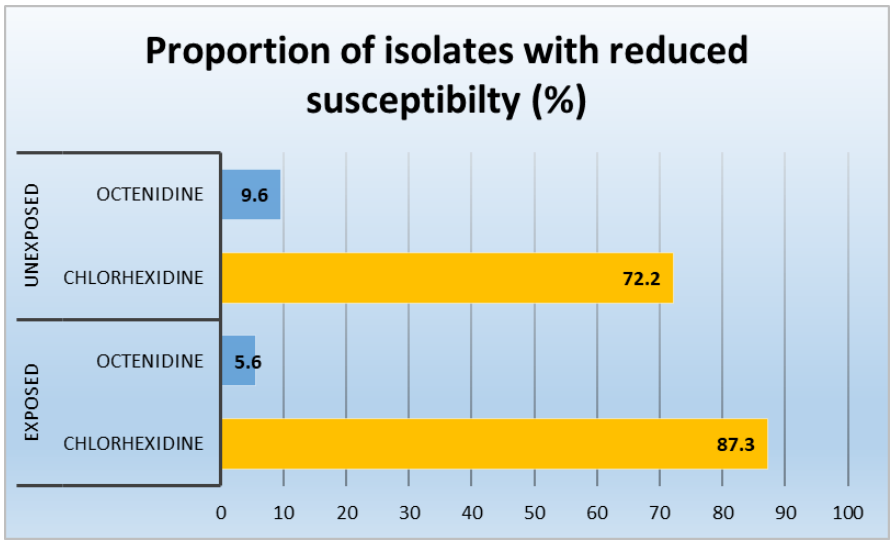
Source 2019, Clinical Microbiology and Infection, 10.1016/j.cmi.2018.12.036

Study design Serial cross-sectional study

Aim of the study Antiseptics are widespread throughout modern healthcare facilities for prevention and control of MRSA transmissions. However, concerns on antiseptics resistance and tolerance are on the rise. This study aims to understand the association between the use of Chlorhexidine (CHX) and Octenidine (OCT), *qacABC* gene carriage in MRSA and reduced antiseptics susceptibility.

Methods Minimal inhibitory concentrations (MIC) of CHX and OCT were determined and genomes were sequenced of 878 MRSA isolates from four healthcare facilities, of which two did not perform preventive washing, one decontaminated the patients with CHX Wash Lotion and Octenisan Nasal Gel, and one decontaminated with Octenisan Wash Lotion and Nasal Gel.

Results An association between the exposure of MRSA to CHX and OCT and the presence of the resistance gene *qacAB* was documented. However, an increased MIC of *qacAB/C*-carrying MRSA was found only against CHX. In addition, isolates exposed to CHX showed increased MIC to CHX. No resistance or adaptation of MRSA isolates to OCT was found, regardless of exposure to OCT or whether *qac* genes were present.



Conclusion **Exposure of MRSA to CHX was associated with deacreased susceptibility to CHX. This association was not observed wir OCT. Constant moitoring of the effectiveness of antiseptics is needed.**