

Dressings containing chlorhexidine gluconate (CHG) are increasingly used in clinical environments for prevention of infection at central venous catheter insertion sites. Increased tolerance to this biocide in staphylococci is primarily associated with the presence of *qacA/B* and *smr* genes” Choudhury et al (2017).

Abstract:

**PURPOSE:** Dressings containing chlorhexidine gluconate (CHG) are increasingly used in clinical environments for prevention of infection at central venous catheter insertion sites. Increased tolerance to this biocide in staphylococci is primarily associated with the presence of *qacA/B* and *smr* genes.

**METHODOLOGY:** We used a culture-independent method to assess the prevalence of these genes in 78 DNA specimens recovered from the skin of 43 patients at catheter insertion sites in the arm that were covered with CHG dressings.

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**RESULTS:** Of the 78 DNA specimens analysed, 52 (67%) possessed *qacA/B* and 14 (18%) possessed *smr*; all samples positive for *smr* were also positive for *qacA/B*. These prevalence rates were not statistically greater than those observed in a subsample of specimens taken from non-CHG treated contralateral arms and non-CHG-dressing exposed arms. A statistically greater proportion of specimens with greater than 72 h exposure to CHG dressings were *qac*-positive ( $P=0.04$ ), suggesting that the patients were contaminated with bacteria or DNA containing *qacA/B* during their hospital stay. The presence of *qac* genes was not positively associated with the presence of DNA specific for *Staphylococcusepidermidis* and *Staphylococcus aureus* in these specimens.

**CONCLUSION:** Our results show that CHG genes are highly prevalent on hospital patients’

skin, even in the absence of viable bacteria.

Reference:

Choudhury, M.A., Sidjabat, H.E., Rathnayake, I.U., Gavin, N., Chan, R.J., Marsh, N., Banu, S., Huygens, F., Paterson, D.L., Rickard, C.M. and McMillan, D.J. (2017) Culture-independent detection of chlorhexidine resistance genes *qacA/B* and *smr* in bacterial DNA recovered from body sites treated with chlorhexidine-containing dressings. *Journal of Medical Microbiology*. 66(4), p.447-453.

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