[P068] STAPHYLOCOCCUS EPIDERMIDIS WALL TEICHOIC ACID CONFERS TOLERANCE TO ANTIBIOTICS AND IMMUNE DEFENSE IN HUMAN BLOOD

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Staphylococcus epidermidis is the leading cause of infections associated with the use of indwelling medical devices. Due to biofilm formation, these infections are very hard to cure. To improve current treatment options, we need a better understanding of the mechanisms *S. epidermidis* uses to promote disease. Wall teichoic acid (WTA) has been implicated in the virulence of *S. aureus* but very little is known regarding its role in *S. epidermis*. Herein, the role of WTA in *S. epidermidis* virulence was evaluated by constructing an *S. epidermidis* WTA mutant and studying its ability to form biofilms, endure antibiotic action, and resist bactericidal immune mechanisms in human blood. Of note, after abolishing WTA production, the size of the bacterium increased and the capacity to regulate autolysis was significantly reduced compared to the WT. Although biofilm formation was not altered by WTA absence, the WTA mutant was significantly more susceptible than the WT to peak serum concentrations of dicloxacillin, vancomycin, imipenem, ciprofloxacin, tetracycline, tigecycline and daptomycin. Furthermore, using a human blood *ex vivo* model, we observed that while 60% of the WT and complemented cells were able to survive upon 4 h of interaction with human blood, only 30% of WTA mutant cells survived. Overall, this study suggests that WTA has an important role in *S. epidermidis* virulence supporting its capacity to tolerate antibiotics and the host immune response, constituting a potential target for new therapeutics.