

Background

Periodontal bacteria occur in both planktonic and biofilm forms. While poor oral hygiene leads to accumulation of bacteria, reducing these microbes is the first step toward good oral hygiene. This is usually achieved through the use of mouthwash solutions. However, the exact antibacterial activity of mouthwash solution, especially when bacteria form biofilms, is yet to be determined. In this study, we evaluated the antibacterial activity of common mouthwash solutions against standard bacteria in their planktonic and biofilm states.

Methods

Standard bacterial strains were cultured, and biofilm were formed. Thereafter, using standard method for determination of minimum inhibitory concentrations (MIC) values of various mouthwash solutions were determined.

Results

Results show that common mouthwash solutions have variable antibacterial activity depending on their major active components. Only mouthwash solutions containing chlorohexidine gluconate or cetylpyridinium chloride exhibited activity against majority, but not all tested bacterial strains in their biofilm state. Additionally, bacteria are generally less susceptible to all mouthwash solutions in their biofilm as compared to planktonic state.

Conclusions

While mouthwash solutions have variable antibacterial activity, bacteria in their biofilm state pose a challenge to dental hygiene/care where bacteria become not susceptible to majority of available mouthwash solutions.