

Original Article

Effects of Prepared Garlic (*Allium Sativum*) Extracts on *C. Albicans* and *s. Aureus*. Isolated from Oral Cavity

Abstract

Background: *Candida albicans* (*C. albicans*) and *Staphylococcus aureus* (*S. aureus*) are among the most prevalent hospital-acquired and healthcare-associated pathogens. It causes severe morbidity and mortality and remains a serious clinical threat even with appropriate treatment. Therefore, more attention should be taken to the herbals and plants to extract new pharmacologically active molecules to fight against these pathogens. Garlic has been known as the most effective plant species in the treatment of bacterial infections. **Aim:** This study aimed to prepare different types of Garlic (*Allium sativum*) extracts and evaluate the antimicrobial effect against *S. aureus* and *C. albicans*, two important and common pathogens isolated from the oral cavity. **Methods:** The antimicrobial activity against both *C. albicans* and *S. aureus* of garlic extracts was evaluated by the macro-dilution method to measure the minimum inhibitory concentration (MIC) of different garlic extracts (Ethanollic Garlic extract (EGE), Aqueous Garlic extract (AGE) and Fresh Garlic extract (FGE)). Kirby-Bauer method (well diffusion method) that measures the zone of inhibition of these extracts was also used. Both methods were compared to the mouthwash containing 0.12% chlorhexidine as a control positive. **Results and Discussion:** MICs for the three types of garlic extract (EGE, AGE, and FGE) were 200mg/ml against both *C.albicans* and *S.aureus*, showing no growth compared with 0.12% chlorhexidine. The means zones of inhibition (ZOI) measured by well diffusion method for 200mg/ml of 20µl of each garlic extract (EGE, AGE, FGE) for *C.albicans* were 29 mm, 31.5mm, 32.25mm, and 12mm for EGE, AGE, FGE, and control, respectively. On the Other hand, the means of ZOI measured by well diffusion method for 200mg/ml of 20µl of each garlic extract (EGE, AGE, FGE) for *S.aureus* were 30mm, 31.5mm, 29mm, and 11.5mm for EGE, AGE, FGE, and control positive, respectively. **Conclusions:** garlic extracts (EGE, AGE and FGE) produced marked antimicrobial properties against *C.albicans* and *S.aureus* and may be a promising source for the development of effective and safe alternative against these pathogens.