



In vitro Comparison of the Effects of Garlic Juice and Chlorhexidine Mouthwash on Oral Pathogens

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Dear Editor,

The research “about the efficacy of garlic juice is higher than chlorhexidine against target bacteria and usable as an effective mouthwash” is an important and conspicuous study. Dental caries still remains one of the most prevalent diseases all over the world. For prevention of oral diseases using mouthwashes is relatively widespread but a large number of bacterial species have become resistant to antibacterial chemicals. It was shown that chlorhexidine is an effectively using chemical mouthwash in many of the countries, but it has side effects such as tooth discoloration, changing oral taste and desquamation of oral mucosa. In addition to these disadvantages oral plaques’ bacteria can become resistant to against chlorhexidine. Various researches to show herbal extracts to prevent plaque accumulation on teeth and use them as alternatives instead of chemical substances (1).

It is characterized by increasing consumer preferences self-medication and the quest for “natural therapy”, herbal products are used increasingly as an alternative to medicines or as supplements in our life (2).

Garlic (*Allium sativum* L.) is a common food spice used widely parts of the world. Garlic has been used as a food,

spice and medicine by a number of populations in the world. Garlic’s main active antibacterial compounds, diallyl thiosulphinate (allicin) was isolated and identified before and it was found to be effective at gram-negative and gram-positive bacteria (3). In similar studies, laboratory investigations show that garlic juice inhibits the growth of bacteria of the genera *Staphylococcus*, *Streptococcus*, *Vibrio* (including *V. cholerae*) and *Bacillus* (4).

In the Amin *et al.* (1) study, it was found that, minimum inhibitory activity (MIC) of garlic juice for *Lactobacillus casei* is 2.5µg/mL, *Strep. mutans* 0.25 µg/mL, *Strep. sanguis* 0.4 µg/mL, *Strep. salivarius* 0.3µg/mL and MICs of chlorhexidine are 5 µg/mL, 0.62 µg/ml, 2.5 µg/mL and 0.35 µg/mL for the same pathogenic bacteria, respectively. Disc diffusion and tube dilution methods are the effective ways to determine the antibacterial activity for garlic juice and chlorhexidine. Especially *Strep. mutans* causes dental caries and it can be inhibited by 0.25 µg/mL MIC of garlic juice is an important result in the study. Similarly, Lee *et al.* (5) found garlic extract may thus play an important role in increased bacterial attachment to orthodontic wires in their research.

In the result, chemical resistance of bacteria causes to need researching more natural and effective ways to

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control plaque on tooth. Garlic has had an important dietary and medicinal role for centuries. In conclusion, garlic extract can be possessed antibacterial activity, also it prevents bacterial contamination and infections in the mouth.

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