Abstract: Abstract:
Background and objectives: Biofilm formation is a common microbial lifestyle in the most environment. One of the most pathogen that can form biofilm is Pseudomonas aeruginosa. Biofilms resistant to the antibiotic therefore it is necessary to find a suitable agent to limit contamination of surfaces and medical devices. In this study we evaluated antimicrobial activity of EDTA and catechin as a herbal agent on planktonic and biofilm cells of P. aeruginosa standard strain.

Material and method: Standard strain of Pseudomonas aeruginosa (ATCC 27853) was cultured on nutrient agar medium for 24h at 37°C. Primary we estimated the (Minimum Inhibitory Concentration) MIC of EDTA and catechin and imipenem antibiotic on P. aeruginosa by micro dilution test. Then the biofilm of this bacterium was formed on microtiter plate and finally the influences of these agents in 2×MIC concentration on biofilm formation were evaluated by colorimetric XTT assay.

Results: MIC of catechin and EDTA on Pseudomonas aeruginosa were 7.24 and 24.92 µg/ml respectively. The result of biofilm detection with XTT assay showed that EDTA inhibited the biofilm formation better than catechin as a herbal agent and imipenem as an antibiotic.

Conclusion: in this study we showed that however catechin could inhibit the growth of the planktonic cells of P. aeruginosa in low concentration compared with EDTA, EDTA inhibited biofilm formation of Pseudomonas better than it with significant mean difference (p<0.05). In view of the results of this study, we can say that the biofilm of Pseudomonas aeruginosa may be resistant to catechin.

Key word: pseudomonas aeruginosa, biofilm, catechin, anti bacterial agent

Presentation: Poster