

## ABSTRAK

Kebersihan rongga mulut merupakan aspek penting selama perawatan menggunakan peranti ortodonti lepasan. Individu pengguna peranti ortodonti lepasan rentan terhadap infeksi mikroorganisme rongga mulut terutama jamur *Candida albicans*. Pengontrolan kebersihan peranti ortodonti lepasan dilakukan baik secara mekanis maupun kimiawi. Pengontrolan mekanis dilakukan dengan menyikat alat dan secara kimiawi menggunakan desinfektan berupa *chlorhexidine* 2%. Penggunaan *chlorhexidine* 2% menyebabkan *staining*, peningkatan kekasaran resin, dan penurunan efektivitas *nystatin*. Serai (*Cymbopogon citratus*) mengandung zat aktif poten sebagai anti jamur khususnya *Candida albicans*. Penelitian ini bertujuan untuk mempelajari perbandingan efektivitas ekstrak serai 25% dan *chlorhexidine* 2% sebagai desinfektan terhadap jumlah *Candida albicans* pada peranti ortodonti lepasan.

Subjek penelitian berupa 12 peranti ortodonti lepasan terbagi dalam 3 kelompok yaitu kelompok ekstrak serai 25%, *chlorhexidine* 2%, dan akuades. Ketiga kelompok direndam dalam suspensi *Candida albicans* kemudian larutan uji. Jumlah pertumbuhan koloni *Candida albicans* setelah pemaparan larutan uji dihitung menggunakan *colony counter*. Data ditabulasi kemudian dianalisis menggunakan Anova satu jalur dan Post hoc LSD<sub>0,05</sub>.

Hasil penelitian tidak menunjukkan perbedaan signifikan rerata pertumbuhan *Candida albicans* kelompok ekstrak serai 25% dengan *chlorhexidine* 2% ( $p > 0,05$ ) dan terdapat perbedaan signifikan pada kelompok desinfektan (ekstrak serai 25% dan *chlorhexidine* 2%) dengan akuades ( $p < 0,05$ ). Persentase penurunan jumlah *Candida albicans* ekstrak serai 25% adalah 85,89% sedangkan *chlorhexidine* 2% adalah 88,75%. Kesimpulan penelitian ini adalah tidak terdapat perbedaan efektivitas ekstrak serai (*Cymbopogon citratus*) 25% dan *chlorhexidine* 2% sebagai desinfektan terhadap jumlah *Candida albicans* pada peranti ortodonti lepasan.

Kata kunci: Peranti ortodonti lepasan, *Candida albicans*, *Chlorhexidine*, Ekstrak Serai

### ABSTRACT

Oral hygiene is important aspect during treatment using removable orthodontic appliances. People using removable orthodontic appliances are susceptible to oral infections, particularly candidiasis. Controlling appliance's hygiene is carried out both mechanically and chemically. Mechanical control is conducted by brushing the appliance and chemical control by using disinfectant for instance, 2% chlorhexidine. Chlorhexidine can cause staining, increased resin roughness, and decreased nystatin effectiveness. Lemongrass contains anti-fungi, particularly against *Candida albicans*. The aim of this study is to understand the effectiveness of 25% lemongrass (*Cymbopogon citratus*) extract compared to 2% chlorhexidine as disinfectant in controlling the number of *Candida albicans* on removable orthodontic appliances.

Twelve removable orthodontic appliances divided into 3 groups: 25% lemongrass extract, 2% chlorhexidine, and aquades. Subjects were immersed in *Candida albicans* suspension then in test solution. The number of colony growth after exposure was calculated using colony counter. Data were tabulated then analyzed using one-way Anova and Post hoc LSD<sub>0.05</sub>.

Results showed no significant difference between 25% lemongrass extract and 2% chlorhexidine ( $p > 0.05$ ) and there were significant differences between the two disinfectants and aquades ( $p < 0.05$ ). The reduction percentage of *Candida albicans* number by 25% lemongrass extract was 85.89% while by 2% chlorhexidine was 88.75%. Conclusion of this study is there is no difference in effectiveness of 25% lemongrass (*Cymbopogon citratus*) extract and 2% chlorhexidine as disinfectant in controlling *Candida albicans* on removable orthodontic appliances.

Keywords: Removable Orthodontic Appliances, *Candida albicans*, Chlorhexidine, Lemongrass Extract