

## INTISARI

Pemakaian alat ortodontik cekat dapat menyebabkan peningkatan akumulasi plak dan gingivitis. Akumulasi plak dan gingivitis bisa dihambat secara kimiawi dengan aplikasi obat secara topikal. Tujuan penelitian ini adalah untuk mengetahui pengaruh aplikasi topikal chlorhexidine gel dan chlorhexidine-sodium fluoride gel terhadap akumulasi plak dan inflamasi gingiva akibat pemakaian alat ortodontik cekat pada anak.

Penelitian eksperimental semu dengan rancangan pre-post test kontrol grup dilakukan pada 12 anak usia 11-14 tahun yang telah dirawat 42 hari dengan alat ortodontik cekat tipe *Roth*. Akumulasi plak dinilai dengan Orthodontic Plaque Index (OPI), sedangkan gingivitis dinilai dengan Gingival Index (GI) dan volume Cairan Sulkus Gingiva (CSG) metode intrasulkular. Pengamatan dilakukan sebelum aplikasi, setelah aplikasi obat selama 4 hari, 8 hari dan 15 hari. Data dianalisis dengan anova multivariat, paired *t-test*, dan independent sample *t-test* dengan tingkat kepercayaan 95%.

Hasil penelitian menunjukkan ada perbedaan bermakna penurunan OPI, volume CSG dan GI antar waktu pengamatan antara kelompok chlorhexidine gel dan chlorhexidine-sodium fluoride gel. Kelompok chlorhexidine-sodium fluoride gel menunjukkan penurunan OPI lebih besar setelah 8 hari aplikasi obat, sedangkan chlorhexidine gel setelah 15 hari. Penurunan bermakna gingivitis yang ditandai dengan volume CSG dan GI terjadi setelah 4 hari aplikasi obat chlorhexidine-sodium fluoride gel.

Disimpulkan bahwa pemakaian chlorhexidine gel dan chlorhexidine-sodium fluoride gel dapat menurunkan akumulasi plak, volume CSG, dan GI, tetapi kombinasi chlorhexidine-sodium fluoride gel lebih cepat dalam menurunkan akumulasi plak dan gingivitis.

Kata kunci: chlorhexidine gel, chlorhexidine-sodium fluoride gel, akumulasi plak, gingivitis.

## **ABSTRACT**

Orthodontic fixed appliances may increased plaque accumulation on the tooth surface and lead gingivitis. Both can be inhibited chemically by topical drug application. The purpose of this study was to determine the effect of topical application of chlorhexidine gel and chlorhexidine-sodium fluoride gel on plaque accumulation and gingival inflammation caused by the use of fixed orthodontic appliances on children.

A Quasi-experimental with pre test-post test control group research design was performed on 12 children aged 11-14 years who were being treated orthodontics with *Roth* bracket in 42nd days. Subjects were divided in 2 groups, the first group received chlorhexidine gel application and the second received chlorhexidine-sodium fluoride gel application. The plaque accumulation data was assessed by Orthodontic Plaque Index (OPI), and the gingivitis was assessed by the Gingival Index (GI) and volume of gingival crevicular fluid (GCF). The data were taken 4 times, namely before drug application, 4 days, 8 days and 15 days after drug application. Data were analyzed by multivariate ANOVA, paired and independent sample t-test with 95% of confidence level.

The results showed that both chlorhexidine gel and chlorhexidine-sodium fluoride gel could significantly reduce OPI, GCF volume and GI based on observation time. However, the chlorhexidine-sodium fluoride gel showed a significant decline over OPI in 8 days after drug application, while chlorhexidine gel after 15 days. A significant decrease in gingivitis signed by GCF volume and GI occurred after 4 days of drug application of chlorhexidine-sodium fluoride gel.

It was concluded that the use of chlorhexidine gel and chlorhexidine-sodium fluoride gel can reduce the accumulation of plaque, GCF volume, and GI, but the combination of chlorhexidine-sodium fluoride gel was faster in reducing plaque accumulation and gingivitis.

Keyword: chlorhexidine gel, chlorhexidine-sodium fluoride gel, plaque accumulation, gingivitis.