

SKRIPSI

PENGARUH PENGGUNAAN VARNISH NATRIUM FLUORIDE 5% DENGAN TRICALCIUM PHOSPHATE TERHADAP KEKERASAN PERMUKAAN GLASS IONOMER CEMENT



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Pengaruh Penggunaan *Varnish Natrium Fluoride 5%* dengan Tambahan *Tricalcium Phosphate* terhadap Kekerasan Permukaan *Glass Ionomer Cement*

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ABSTRAK

Tindakan penanganan karies pada gigi sulung umumnya menggunakan bahan restorasi *glass ionomer cement* (GIC) yang memiliki kelebihan dalam pelepasan fluorida. *Varnish natrium fluoride 5%* dengan *tricalcium phosphate* mampu meningkatkan kekerasan permukaan enamel. Tujuan penelitian ini adalah untuk mengetahui pengaruh pemberian *varnish natrium fluoride 5%* dengan *tricalcium phosphate* terhadap kekerasan permukaan restorasi *glass ionomer cement*. Jenis penelitian ini adalah eksperimental laboratoris berupa *post test only control group design*. Sampel dibuat dari *GC Fuji IX GP extra* sebanyak 36 buah yang kemudian direndam dalam saliva buatan selama 24 jam dalam inkubator dengan suhu 37°C. Sampel dibagi menjadi 2 kelompok, pada kelompok perlakuan diberikan *varnish natrium fluoride 5%* dengan *tricalcium phosphate* dan kelompok kontrol tidak diberikan, kemudian kedua kelompok direndam kembali dalam saliva buatan selama 24 jam di inkubator. Pengujian kekerasan permukaan menggunakan *Vickers Hardness Tester*. Hasil penelitian menunjukkan nilai rata-rata kekerasan permukaan pada kelompok kontrol sebesar 51,65 VHN dan kelompok perlakuan sebesar 62,87 VHN. Uji *Independent T-test* menunjukkan hasil $p < 0,05$ yang berarti terdapat perbedaan bermakna antara kedua kelompok. Kesimpulan penelitian ini adalah terdapat pengaruh yang signifikan pada nilai rata-rata kekerasan permukaan restorasi *glass ionomer cement* yang diberikan *varnish natrium fluoride 5%* dengan *tricalcium phosphate*.

Kata Kunci : *fluoride varnish, glass ionomer cement, kekerasan permukaan.*



The Effect of Using Varnish Natrium Fluoride 5% with the Addition of Tricalcium Phosphate to the Surface Hardness of the Glass Ionomer Cement

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ABSTRACT

The treatment of caries in primary teeth generally uses restorative materials of glass ionomer cement (GIC) that has the advantages of releasing fluoride. Varnish natrium fluoride 5% with tricalcium phosphate was able to increase the enamel's surface hardness. The objective of this study was to determine the effect of giving varnish natrium fluoride 5% with tricalcium phosphate on the surface hardness of the glass ionomer cement restoration. This type of research was an experimental laboratory in the form of a post test only control group design. The samples were made from GC Fuji IX GP extra of 36 pieces which were then immersed in artificial saliva for 24 hours in an incubator at the temperature of 37°C. The samples were divided into 2 groups, the treatment group was given varnish natrium fluoride 5% with tricalcium phosphate and the control group was not given them, then both groups were immersed again in artificial saliva for 24 hours in an incubator. Surface hardness testing used Vickers Hardness Tester. The results showed the average value of surface hardness in the control group of 51.65 VHN and the treatment group of 62.87 VHN. Independent T-test showed results of $p < 0.05$ which means that there were significant differences between the two groups. The conclusion of this study was that there was a significant influence on the average value of the surface hardness of glass ionomer cement restoration given varnish natrium fluoride 5% with tricalcium phosphate.

Keywords: *fluoride varnish, glass ionomer cement, surface hardness*

