

ABSTRAK

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Program Studi : Pendidikan Dokter Gigi
Judul : Hubungan Kedalaman Intrusi Air Terhadap Kekerasan Semen Ionomer Kaca (SIK)

Latar Belakang: Semen Ionomer Kaca (SIK) adalah bahan restorasi yang terdiri dari bubuk kaca kalsium fluoroaluminosilikat dan asam poliakrilik. Pada tahap awal reaksi setelah dilakukan pencampuran, SIK sensitif terhadap udara dan air yang dapat menghambat reaksi pengerasan, sehingga perlu diberikan perlindungan dengan material yang kedap air dan salah satu material tersebut adalah bonding agent. **Tujuan:** Menganalisis hubungan kedalaman intrusi air terhadap kekerasan SIK. **Metode:** 12 spesimen SIK dengan diameter 5 mm dan tebal 2 mm, dibagi menjadi 3 kelompok: kelompok 1 tanpa bahan pelindung, kelompok 2 diaplikasikan varnis, dan kelompok 3 diaplikasikan bonding agent. Seluruh spesimen direndam dalam *methylene blue* 0,1% selama 24 jam dan dimasukkan ke dalam inkubator dalam suhu 37°C. Selanjutnya setiap sampel dibelah menjadi 2 bagian, pada satu bagian dilakukan pengukuran terhadap kedalaman intrusi air menggunakan *measuring microscope* sedangkan pada satu sisi lainnya dilakukan pengukuran terhadap kekerasan menggunakan *Knoop Microhardness Tester*. Kemudian hasilnya dianalisis secara statistik. **Hasil:** Pada tiap kelompok terdapat hubungan korelasi yang kuat antara kedalaman intrusi air dan kekerasan SIK dengan nilai korelasi -0,868 dan nilai $p < 0,05$. **Kesimpulan:** Semakin dalam intrusi air pada SIK, semakin rendah kekerasan SIK.

Kata kunci:

Semen Ionomer Kaca (SIK), kedalaman intrusi air, kekerasan

ABSTRACT

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Title : The relation of the depth of water intrusion to the hardness of Glass Ionomer Cement (GIC)

Background: Glass Ionomer Cement (GIC) is a restorative material consisting of calcium fluoroaluminosilicate glass powder and polyacrylic acid. At the initial reaction after mixing, GIC is sensitive to the air and water which can inhibit the setting reaction, therefore it is needed a protection by materials which are watertight and one of them is bonding agent. **Aim:** To analyze the relation of the depth water intrusion to the hardness of GIC. **Method:** 12 specimen with 5 mm in diameter and 2 mm in thickness, were divided into 3 groups: the first group wasn't given a coating, the second group was given varnish, and the third group was given bonding agent. All specimen were soaked in methylene blue 0,1% during 24 hours and placed in incubator with 37°C in temperature. Furthermore, each sample was cut into 2 parts, one part was measured to know the depth of water intrusion by measuring microscope while the other part was measured to know its hardness by Knoop Microhardness Tester. Afterwards, the result is analyzed statistically. **Result:** There is a strong correlation between the depth of water intrusion and the hardness of GIC in each group with correlation value -0,868 and p value < 0,05. **Conclusion:** The deeper the water intrusion of GIC, the lower the hardness of GIC.

Key words:

Glass Ionomer Cement, depth of water intrusion, hardness.