

Kekuatan tarik diametral resin komposit nanofil dengan iradiansi berbeda = The effect of different irradiation on the diametral tensile strength of nanofilled composite resin

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Abstrak

Latar belakang: LCU-LED prototipe metode PWM iradiansi 900 dan 1.000 mW/cm² telah dibuat untuk mengurangi panas dengan lama penyinaran 10 detik.

Tujuan: Menganalisis pengaruh iradiansi terhadap kekuatan tarik diametral komposit resin nanofil.

Metodologi: Spesimen disinari dengan LCU-LED prototipe iradiansi 900 dan 1.000 mW/cm² serta LCU pembanding (900 mW/cm²). Komposit resin nanofil ditumpat ke dalam cetakan stainless steel. Uji kekuatan tarik diametral dilakukan menggunakan Universal Testing Machine. Analisis statistik menggunakan One-way ANOVA dan LSD(=0.05).

Hasil penelitian: Kekuatan tarik diametral dari iradiansi 900,1.000 mW/cm² dan LCU pembanding secara berurutan adalah 48,75±5,3, 49,85±7,7 dan 49,48±5,3 MPa. Analisis statistik menunjukkan bahwa tidak terdapat perbedaan bermakna pada semua kelompok ($p>0.05$).

Kesimpulan: Tidak terdapat pengaruh iradiansi sinar 900 dan 1000 mW/cm² terhadap kekuatan Tarik diametral komposit resin nanofil.

Background: Prototype LCU-LED using PWM with irradiance 900 and 1,000mW/cm² has constructed that can reduce temperature for polymerizing in ten seconds.

Objective: To analyze the effect of difference irradiance on diametral tensile strength of the composite resin nanofilled.

Method: Specimens were polymerized using the prototype with irradiance of 900, 1.000 mW/cm² and commercially available(900 mW/cm²) as comparison. Diametral tensile strength was determined using Universal Testing Machine. Data were analyzed using One-way ANOVA followed by LSD(=0,05).

Result: Value of diametral tensile strength irradiance 900,1.000 mW/cm² and commercial available were 48.75 ± 49.85 ± 5.3 MPa and 7.7 MPa respectively. Statistical analysis showed that there was no significant difference in groups($p>0.05$).

Conclusion: There is no effect of light irradiance on the diametral tensile strength of composite resin nanofilled.