INTISARI

Kekuatan pelekatan antara *dentin bonding agent (DBA)* dan gigi memegang peranan penting dalam era *adhesive dentistry*. Teknik *immediate dentin sealing* (IDS) dan *resin coating* adalah salah satu cara untuk mendapatkan pelekatan adhesif yang optimal. Penelitian ini mengkaji apakah terdapat pengaruh dari *immediate dentin sealing* dan *resin coating* terhadap kekuatan geser pelekatan pada gigi tiruan cekat litium disilikat.

Gigi premolar pasca cabut sejumlah 30 buah dipreparasi hingga seluruh permukaan oklusal dan dentin terekspos. Enam kelompok penelitian (n=5) diperoleh dari kombinasi dua macam *dentin bonding agent* (DBA): *two-bottle system universal* dentin *bonding agent* (*lightly-filled* DBA) dan sistem *bonding total-etch* (*filled* DBA); serta tiga metode aplikasi: *immediate dentin sealing* (IDS), *immediate dentin sealing* dengan *resin coating* (IDSRC), dan *delayed dentin sealing* (DDS). Aplikasi DBA dilakukan sesuai kriteria tiap kelompok, dan restorasi sementara dipasangkan. Sebelum diinkubasi selama 14 hari pada suhu 37^{o}C, *surface treatment* dilakukan untuk membersihkan sisa restorasi sementara. Sementasi gigi tiruan cekat litium disilikat menggunakan *preheated composite*. Uji kekuatan geser dilakukan menggunakan *universal testing machine*.

Uji ANAVA dua jalur pada nilai rerata uji geser menunjukkan adanya perbedaan yang signifikan pada metode aplikasi DBA ($p < 0,05$). Uji *post hoc* LSD menunjukan bahwa pemberian *resin coating* pada IDS tidak memiliki pengaruh yang signifikan pada kelompok DBA *filled adhesive*, sedangkan pada penggunaan DBA *lightly filled adhesive,* IDS dan *resin coating* secara signifikan meningkatkan nilai pelekatan dentin. *Two-bottle system universal* dentin *bonding agent* dapat menjadi material alternatif pada teknik *immediate dentin sealing* apabila disertai dengan pemberian *resin coating.*

Kata kunci: *immediate dentin sealing, resin coating,* kekuatan geser pelekatan, *dentin bonding agent*

ABSTRACT

The bonding strength between dentin bonding agent (DBA) and teeth plays a crucial role in the era of adhesive dentistry. Immediate dentin sealing (IDS) and resin coating techniques are among the methods to achieve optimal adhesive strength. This study investigates whether immediate dentin sealing and resin coating have an influence on the shear bond strength of lithium disilicate.

Thirty extracted premolar teeth were prepared until the entire occlusal surface and dentin were exposed. Six research groups (n=5) were obtained from combinations of two types of dentin bonding agents (DBA): universal DBA two-bottle system (lightly-filled DBA) and total-etch bonding system (filled DBA); as well as three application methods: immediate dentin sealing (IDS), immediate dentin sealing with resin coating (IDSRC), and delayed dentin sealing (DDS). The DBA application was carried out according to the criteria of each group, and temporary restorations were placed. Before incubation for 14 days at 37°C, surface treatment was performed to clean residual temporary restorations. Cementation of lithium disilicate fixed dental prostheses was done using preheated composite. Shear bond strength testing was conducted using a universal testing machine.

A two-way ANOVA on the mean shear test values indicated a significant difference in the application methods of the dentin bonding agent (DBA) ($p < 0.05$). Post hoc LSD tests revealed that the application of resin coating on the immediate dentin sealing (IDS) had no significant effect on the DBA filled adhesive group. In contrast, with the use of DBA lightly filled adhesive, both IDS and resin coating significantly increased dentin adhesion values. A universal dentin bonding agent in a two-bottle system could be an alternative material for the immediate dentin sealing technique when accompanied by resin coating.

Keywords: immediate dentin sealing, resin coating, shear bond strength test, dentin bonding agent