ABSTRACT

**Background**: Dentin bonding is the material to attach the composite resin to dentine. The main composition is 2-hydroxyethyl methacrilate (HEMA). After polymerization, occurred residual monomers which diffuse from dentinal tubuli to pulp can affect odontoblast. **Objective**: To analyze MMP-1 and TGF-β1 expression on odontoblast of complex dentin pulp of wistar rat tooth which was treated with dentin bonding HEMA and HEMA murni. **Methods**: Maxillary first molar tooth wistar rat was only bur prepared for 3 days (group 1), then HEMA 10% was applied for 3 days (group 2). Dentin bonding HEMA was applied and polymerization light cured for 3 days (group 3). After application HEMA and dentin bonding HEMA the tooth was filled with RMGIC. The rat was sacrificed and maxillary resection on the define day for immunohistochemistry evaluation. **Result**: Expression MMP-1 on dentin bonding HEMA were lower than HEMA, expression TGF-β1 on dentin bonding HEMA were higher than HEMA. **Conclusion**: There were significant differences on expression MMP-1 dan TGF-β1 between dentin bonding HEMA and HEMA.

**Keyword**: Dentin bonding, HEMA, MMP-1, TGF-β1