

Combination Effect of Calcium Hydroxide with Green Tea Extract and Calcium Hydroxide with Cocoa Pod Husk Extract to MAPK P38 Activation and Reparative Dentin Wide

Abstract

Background: Dental pulp could be affected by external factors such as caries or trauma. The treatment of choice to this condition for vital pulp is to clean the cavity from the infected tissue and the pulp capping. Calcium hydroxide as a gold standard of the pulp capping treatment has several weakness: lack of dentin adaptation, not increasing odontoblast differentiation consistently, and also show cytotoxic reaction on cell culture which cause tunnel defect in the formed reparative dentin matrix. Green tea and cocoa pod husk have been widely researched because of the polifenol content for its anti-inflammation and antioxidant properties. ***Purpose:*** the purpose of this research is to compare the combination effect of calcium hydroxide with green tea extract and calcium hydroxide with cocoa pod husk extract to mapk p38 activation and formed of reparative dentin wide. ***Methods:*** thirty six male wistar rats were dividing to six groups, anesthetized and perforated on the first upper molar. The first and fourth groups were given the combination of calcium hydroxide and distilled water then filled with cention. The second and fifth groups were given the combination of cocoa pod husk extract and calcium hydroxide then filled with cention. the third and sixth groups were given the combination of green tea extract and calcium hydroxide then filled with cention. The first to third groups were observed at the 7th day, the fourth to sixth groups was given the same application as first to third groups then observed at the 28th day. All the samples were coloured with hematoxilin-aeosin to see the reparative dentin wide area on the day 28th and also immunohistochemistry to count the activated p38 cells on the day 7th and 28th then observed under the 400x magnification microscope. ***Conclusion:*** The green tea extract and calcium hydroxide combination group is better than cocoa pod husk extract and calcium hydroxide combination group towards MAPK p38 activation and the reparative dentin wide.

Keywords: pulp capping, green tea extract, cocoa pod husk extra