

## Scanning Electron Microscopic Study of the Cleaning Ability of Various Root Canal Irrigants in Primary Teeth

Panit Banditsing<sup>1</sup>, Siriruk Nakornchai<sup>1</sup> and Duangrat Owattanapanich<sup>2</sup>

<sup>1</sup>Department of Pediatric Dentistry, Mahidol University, Bangkok

### Abstract

Cleaning a root canal is important for successful endodontic treatment. Currently, several irrigants have been suggested for primary teeth. The objective of this study was to evaluate the cleaning ability of various root canal irrigants in primary teeth. Forty-four primary anterior teeth with periapical lesion were selected and divided into four groups using different root canal irrigants: 1 % sodium hypochlorite; 2 % chlorhexidine liquid; 2 % chlorhexidine gel and normal saline. The roots were prepared for SEM analysis. Four areas of each one third were examined and scored. The data were analyzed using Kruskal Wallis H and Friedman test. Result showed that the best cleaning was found in the coronal third and the worst in the apical third ( $P<0.01$ ). Cleaning result of chlorhexidine gel did not significantly differ from that of sodium hypochlorite. In addition, the cleaning ability of chlorhexidine gel was better than that of chlorhexidine liquid in all root thirds. No significant difference was observed between chlorhexidine liquid and normal saline in any root thirds. It was concluded that the least effective cleaning ability of all irrigants were found in the apical third, chlorhexidine gel showed better cleaning than chlorhexidine liquid and normal saline, but did not differ from sodium hypochlorite.

**Keywords:** Chlorhexidine, Irrigants, Sodium hypochlorite, Pulpectomy, Primary teeth

Received Date: Jan 8,2018

Accepted Date: Mar 6,2018

doi: 10.14456/jdat.2018.31

### Correspondence to:

Siriruk Nakornchai, Department of Pediatric Dentistry, Mahidol University, 6 Yothi Road, Ratchathewi District, Bangkok 10400 Thailand

Tel: 0897723011 Email: siriruk.nak@mahidol.ac.th

### Introduction

Debridement and disinfection of a root canal are considered to be essential for predictable long-term success of pulpectomy, especially in the primary teeth that have a complex root canal anatomy: accessory canals, apical ramifications, thin root canals and

morphological irregularities caused by resorption.<sup>1-4</sup> Instrumentation and irrigation with a solution alone cannot adequately reduce infection in a root canal system. Therefore, some antimicrobial root canal irrigants, such as 1 % sodium hypochlorite and/or chlorhexidine