

5. If NOAC administration is interrupted preoperatively, re-administration should begin postoperatively once hemostasis is achieved.

Several specific recommendations have been developed. For dabigatran, the recommended interruption is specific to the patient's creatinine clearance value. Those who have a creatinine clearance of 50 mL/min or more should discontinue dabigatran 24 to 48 hours before surgery. If the creatinine clearance is less than 50 mL/min, discontinuation should be extended for 3 to 5 days preoperatively. In the case of rivaroxaban, any interruption should begin at least 24 hours before any dental procedure

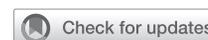
associated with a bleeding risk. Apixaban discontinuation should begin 24 hours before procedures with a low risk of bleeding and 48 hours before any procedure with a high bleeding risk.

Fortier K, Shroff D, Reebye UN: Review: An overview and analysis of novel oral anticoagulants and their dental implications. *Gerodontology* 35:78-86, 2018

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DENTAL CARIES

Vitamin D and caries in Korean children



BACKGROUND

Vitamin D is an important nutrient, active in musculoskeletal and dental health through the regulation of calcium and phosphorus absorption in the small intestine. An excessive intake of vitamin D has health consequences, as does a vitamin D deficiency. In the area of oral health, vitamin D is involved in tooth development, so its deficiency leaves teeth vulnerable to dental caries because of the enamel defects that occur. Vitamin D status is determined by measuring 25-hydroxy vitamin D (25[OH]D) levels. A study in Korean individuals showed Koreans were prone to serious health risks because of deficient 25(OH)D levels and that younger generations were particularly likely to have a vitamin D deficiency. The association between 25(OH)D levels and dental caries in Korean children was investigated.

METHODS

Data were taken from the Korea National Health and Nutrition Examination Survey performed in 2008-2013. Children age 10 to 12 years were surveyed, with vitamin D intake measured by analyzing 25(OH)D levels. In addition, caries experience in the children's permanent dentition was evaluated using the decayed-missing-filled teeth (DMFT) index and the decayed-missing-filled (DMF) rate. The data were then evaluated statistically.

RESULTS

Most (61.7%) of the 1688 children had 25(OH)D levels under 50 nmol/L, 51.7% had caries experience, and 49.2% had first molar caries experience. Children with 25(OH)D levels less than 50 nmol/L had a higher proportion of dental caries experience than children with levels of 25(OH)D levels of 50 nmol/L or greater. Groups of children who had higher 25(OH)D levels

had lower proportions of children with caries experience and first molar caries experience.

The levels of 25(OH)D and caries experience were not related in multivariate analysis. However, 25(OH)D level and first molar caries experience were significantly associated. When the analysis controlled for sex, household income, age, and frequency of tooth brushing, children with 25(OH)D levels under 50 nmol/L were 1.295 times more likely to have first molar caries experience than those whose 25(OH)D levels were 50 nmol/L or more.

Analysis of the dose-response relationship between 25(OH)D level and dental caries experience indicated a negative correlation. Lower 25(OH)D levels correlated with higher numbers of teeth with caries; however, the association was weak.

DISCUSSION

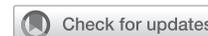
The most important insights into the relationship between vitamin D levels and caries were the fact that children with 25(OH)D levels lower than 50 nmol/L were 1.295 times more likely to have first molar caries experience than those whose 25(OH)D levels were over 50 nmol/L. In addition, 25(OH)D levels and dental caries experience were negatively correlated, although that relationship was not strong.

Clinical Significance

No causative relationship was found between levels of vitamin D and dental caries. However, an insufficiency of vitamin D may be associated with dental caries. Further study is needed to clarify the relationship.

ENDODONTICS

Better analgesia during root canal treatment



BACKGROUND

Inferior alveolar nerve block (IANB) is a common local anesthetic technique used for root canal treatment in mandibular teeth. Its failure rate is just 15% in healthy teeth, but increases to 44% to 81% in teeth with acute irreversible pulpitis. The efficacy of various pain management strategies and supplemental anesthetic techniques and preoperative medications has been evaluated in various studies. A systematic review was done to evaluate the effectiveness of various interventions for pain relief during root canal treatment in lower molars with irreversible pulpitis.

METHODS

A review of the Cochrane Central Register of Controlled Trials (CENTRAL), Medline (PubMed), SCOPUS, and MEDLINE (Ovid) databases identified 17 studies suitable for analysis. A total of 1504 participants were covered, with each study comparing an experimental (supplemental) technique or techniques with standard interventions in IANB. The 17 studies were divided into 5 categories for the analysis, with some used in more than 1 comparison. Most measured the clinical success of IANB using lip numbness, but 5 used lip numbness plus a cold pulp test, and 2 used electric pulp testing. Pain measurement techniques also varied among the studies, with 13 using the Heft-Parker visual analogue scale, 2 using a verbal analogue scale, 1 using a visual analogue scale, and 1 using a verbal description of the pain experienced while having root canal treatment.

RESULTS

Standard interventions with IANB were compared to the following:

- Changing the techniques of local anesthetic injection
- Using a supplemental injection plus standard intervention
- Changing the features of local anesthetic
- Premedicating with nonsteroidal anti-inflammatory drugs (NSAIDs), acetaminophen, or a combination of acetaminophen and ibuprofen

- Performing supplemental infiltration with other local anesthetic agents, such as 2% articaine with 1:200,000 epinephrine, 4% articaine with 1:100,000 epinephrine, 30 mg mL⁻¹ of ketorolac tromethamine, and 4 mg mL⁻¹ of dexamethasone

Although no significant effect on pulp anesthesia resulted from changing the injection techniques or performing a supplemental injection compared to the standard treatment, changing the anesthetic features and increasing anesthetic volumes produced significantly higher rates of anesthesia compared to standard treatment. In addition, a significant increase in the success of anesthesia was obtained by premedicating with NSAIDs.

DISCUSSION

Increasing anesthetic volumes and premedicating with NSAIDs produced a predictable anesthetic results and greater pain control during endodontic treatment than the standard technique used for IANB.

Clinical Significance

Endodontists should consider using a couple of supplemental interventions to obtain better anesthesia for patients having root canal treatment in a lower molar with irreversible pulpitis. The best approach includes increasing the volume of anesthetic used and premedicating with NSAIDs.

Tupyota P, Chilertvanitkul P, Laopaiboon M, et al: Supplementary techniques for pain control during root canal treatment of lower posterior teeth with irreversible pulpitis: A systematic review and meta-analysis. *Aust Endod J* 44:14-25, 2018

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