

$P \leq .10$ level of significance. When multivariable analysis was done, only pain score, appointment, and time point remained significant predictors of analgesic consumption. For each unit the VAS score increased, total analgesic consumption increased 3% after adjusting for dental irregularity, age, appointment, and time point.

DISCUSSION

During the first 3 months of treatment, orthodontic patients experienced various levels of pain during the first week after

each appointment. Pain scores were greatest after the initial bond-up appointment, with lesser levels at the second appointment, then the first appointment.

Johal A, Ashari AB, Alamiri N, et al: Pain experience in adults undergoing treatment: A longitudinal evaluation. *Angle Orthod* 88:292-298, 2018

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PEDIATRIC DENTISTRY

Silver diamine fluoride for preschool caries



BACKGROUND

Low-income children in the United States are at risk for untreated dental decay, which is often related to their poor access to dental care. Early childhood caries affects young children and is particularly prevalent among vulnerable, uninsured, and low-income populations. Because the consequences of untreated decay in preschool children can have serious consequences for the child's health and can negatively affect many aspects of life for the parents, an effective, low-cost way is needed to treat caries in children at high risk for their development and limited access to dental care. Silver diamine fluoride (SDF) is an anticaries agent that can arrest dental decay and could potentially address the epidemic of untreated decay among young children. It can provide a way to prevent or delay dental treatment until the child reaches an age where cooperation can be elicited more readily. The effectiveness of 38% SDF in arresting active dental caries lesions and reducing or preventing dental pain and infections in preschool children at high risk for caries was investigated. In addition, parental acceptance of SDF treatment and the effectiveness of arrest related to duration of SDF application time were assessed.

METHODS

Thirty-two children with 118 active caries in primary teeth were enrolled in the study. They ranged in age from 2 to 5 years, and most were Hispanic/Latino (71.9%) or white (15.6%). Each received a baseline examination and 38% SDF application to all lesions. Repeat evaluations were done 3 weeks later and again at 3 months later to evaluate the color and consistency of the lesions using gentle pressure with a probe. Other measures were the presence or absence of pain and infection at each visit and through a parent interview. Efficacy of SDF was judged on the basis of clinical outcomes. Treatment success was determined by the presence of dark, hard, and black lesions with no pain or infection. Treatment failure was defined as the presence of lesion progression, a soft yellow lesion, pain, or infection. SDF application was recorded in seconds, with 120 seconds set as the goal.

The child's behavior was rated at each encounter. In addition, the parents' acceptability of the treatment was determined 2 to 3 weeks after SDF application via questionnaire, noting whether the process was easy, the parents were comfortable with the discoloration after SDF application, the process was pain free for the child, and the child accepted the taste of the SDF.

RESULTS

Thirty children completed the study, and 30 parents completed the questionnaire. At baseline, 92.4% of the lesions were in posterior teeth and 7.6% in anterior teeth. One hundred six were active, and 12 had initial interproximal decay that could only be evaluated radiographically. At recall, 8 of these 12 could still not be assessed clinically, so they were eliminated from the study.

At first recall, of 102 lesions assessed, 100 appeared black and hard, indicating successful caries arrest for an arrest rate of 98.0%. Two lesions remained only partially black and soft in some areas and were treated with a second SDF application. These were arrested at second recall. None of the children had pain or infection.

Mean SDF application time was 83.5 seconds. Length of time SDF was applied and effectiveness of the treatment showed no significant association.

Clinical Significance

SDF offers the clinician an easy, highly efficient, and nonsurgical method of managing the carious lesions of primary teeth in young children. It could prove very useful in addressing the public health problem of early childhood caries among underserved families and communities.

Parents reported the SDF application was easy, were comfortable with the discoloration of the teeth, and had children who accepted the painlessness of the procedure and the taste of the SDF. Child behavior did not correlate with subjective parent feelings.

DISCUSSION

SDF proved effective in arresting active caries lesions in the primary teeth of preschool children. Parents were accepting of the

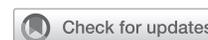
process and felt it was easy, effective, and without objectionable attributes.

Clemens J, Gold J, Chaffin J: Effect and acceptance of silver diamine fluoride treatment on dental caries in primary teeth. *J Public Health Dent* 78:63-68, 2018

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PERIODONTAL DISEASE

Noise and periodontitis



BACKGROUND

Periodontitis is a chronic inflammatory disease that results from pathogenic bacteria interacting with the host's immune response. It's common throughout the world, particularly among adults. It may be an early indicator of systemic inflammatory diseases and is associated with a number of risk factors. Noise exposure is an occupational hazard that affects many workers worldwide. It can lead to impaired hearing, sleep disturbances, psychological stress, and cardiovascular diseases. Noise serves as a psychological stressor that can alter the immune system and could generate reactive oxygen species and proinflammatory cells, which can lead to inflammation of various types. It was hypothesized that noise exposure at work could affect the development of periodontitis. The link between excessive noise exposure in the workplace and periodontitis was investigated in a representative sample from the 4th Korea National Health and Nutrition Examination Survey (KNHANES IV) 2007 to 2009.

METHODS

A total of 8927 workers age 19 to 54 years were included in the study sample. Self-report questionnaires were used to determine noise exposure. Other covariates that were tracked included age, sex, perceived stress level, place of residence, income, education, health behaviors, diabetes, obesity, and white blood cell (WBC) count. The association between noise exposure and periodontitis was evaluated using logistic regression analysis.

RESULTS

Of the 8927 participants, 29.3% were exposed to occupational noise. The exposed workers' average age was 38.2 years and most (59.2%) were men. Compared to workers who were not exposed, the exposed workers were more likely to be older, experience greater stress levels, live in rural areas, have lower income, receive less education, brush their teeth less frequently, binge drink, and smoke. Exposed workers also had a higher

WBC count, tended to have diabetes, and were more likely to be obese. Most were blue collar workers rather than white collar workers. Mechanics in particular had a high likelihood of being exposed to excessive workplace noise.

When the relationship between noise and periodontitis was evaluated, a significant relationship was seen between occupational noise exposure and periodontitis in exposed workers who had a severe problem with noise compared to those not exposed. The exposed workers age 45 years or younger were significantly more likely to have periodontitis than exposed workers in other age groups.

DISCUSSION

Exposure to occupational noise was shown to be significantly related to periodontitis in these Korean workers. The association remained significant even after adjusting for all of the demographic and socioeconomic factors, health behaviors, and medical problems assessed in this study.

Clinical Significance

It's important to address the problem of excessive occupational noise if we want to manage modifiable risk factors for periodontitis. We still need some longitudinal studies to further define the relationship between the environment of workers and the likelihood of developing periodontitis.

Shim S-H, Han D-H: Exposure to occupational noise and periodontitis in Korean workers. *J Periodontol* 89:431-439, 2018

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