RESEARCH SUMMARY

Dental erosion and toothbrushing habits of school children

Dental erosion in a group of British 14-year-old, school children. Part III: Influence of oral hygiene practises

Y. H. Al-Dlaigan, L. Shaw and A. J. Smith *Br Dent J* 2002; 192: 526-530

Objectives

The aims of this study were firstly to describe the dental history and oral hygiene practises in a cluster random sample of 14-year-old children in Birmingham UK. The second aim was to determine whether the oral hygiene practises are associated with dental erosion.

Method

A total of 418, 14-year-old schoolchildren from a cluster random sample in Birmingham, UK were assessed for dental erosion (209 males and 209 females). Data on the dental history and oral hygiene practises were obtained from a self-reported questionnaire supplemented by a structured interview. The data were analysed using SPSS with Mann-Whitney *U* analyses and odds ratios.

Results

74% of the teenagers claimed to attend the dentist on a six-monthly basis; 60% brushed their teeth twice a day ie before breakfast and last thing at night, 25% once a day, 12% three times or more a day and 3% less than once a day. It was also found that 28% of the children brushed their teeth after meals; 92% of the children used a manual toothbrush and 56% of them replaced their toothbrush every three-months. The most common technique used by the children was a circular brushing movement; 44% of them used a mouthwash and 40% used other interdental cleaning. Girls brushed their teeth more frequently than boys. Associations were found between dental erosion and brushing teeth last thing at night, after meals, techniques of brushing teeth, and type of toothbrush and frequency of brushing.

Conclusion

It was concluded that reported oral hygiene practises in teenage schoolchildren in Birmingham, UK complied with generally recommended guidelines. However, there was an association between dental erosion and some of these oral hygiene practises. Advice concerning the impact of some oral hygiene procedures needs to be given to those who are susceptible to dental erosion.

IN BRIEF

- The aims of this study were, first to describe the dental history and oral hygiene practices in a cluster random sample of 14-year-old children in Birmingham UK. Secondly, to determine whether the oral hygiene practices are related to dental erosion.
- Data on the dental history and oral hygiene practices were obtained from a self-reported questionnaire supplemented by a structured interview to 418 children (209 male, 209 female).
- Oral hygiene practices in teenage school children in Birmingham, UK complied with generally recommended guidelines.
- There was a relationship between dental erosion and some of these oral hygiene practices.
- Advice concerning the impact of some oral hygiene procedures needs to be given to those who are susceptible to dental erosion.

COMMENT

Determination of risk factors and co-factors associated with dental erosion has become an important field of epidemiological research in dentistry. The authors have already published their results regarding socio-economic background and diet in this group of 418 14-year-olds.^{1,2}

This paper reports on toothbrushing habits and its relationship to erosion. The descriptive results are similar to those of the Child Dental Health Survey³ but the association of oral hygiene practices with erosion is less clear. Although the applied correlation coefficient is not stated, the time of toothbrushing was the only variable to have a significantly high odds ratio and interestingly the frequency of toothbrushing did not. Speculation as to why toothbrushing last thing at night was associated with increasing levels of erosion was centred on acid drinks before bedtime. In our study, we reported that toothwear was no worse in bulimics who brushed immediately after self-induced vomiting compared with those who delayed brushing.⁴ More work is needed to ascertain whether children do drink such beverages before bed or on waking in the night.

The authors acknowledge the possible contradiction regarding greater toothbrushing frequency in females who exhibit less toothwear compared with males, despite the males' increased intake of acid beverages. Perhaps toothbrushing is not an important factor in contributing to the exposure of dentine in this sample of children diagnosed with acid erosion. Buccal and labial sites may be more susceptible to toothbrush abrasion although incisal/ occlusal were the most commonly worn through to dentine; this highlights one of the enormous difficulties facing researchers.

Dental erosion is used as a term describing both the aetiology and the descriptor of the condition; the multi-factorial nature of toothwear means it is very difficult to determine the precise contribution of individual factors in subjects with wear through to dentine. Tooth surfaces may be eroded by acids but the additive effect from abrasives in toothpaste and the diet, not to mention attrition, complicate analysis. Epidemiological studies of erosion and toothwear have not thus far yielded strong associations for a range of potential aetiologies (two or more cans of fizzy drinks, bruxism, toothbrushing etc.). More research is still necessary.

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2. Al-Dlaigan Y H, Shaw L, Smith A. Dental erosion in a group of British 14-year-old schoolchildren. Part II. Influence of dietary intake. *Brit Dent J* 2001; 190: 258-261.
3. O'Brien M. *Children's dental health in the UK 1993*. Office of population censuses and surveys. HMSO, London 1994.
4. Milosevic A, Brodie D A, Slade P D. Dental erosion, oral hygiene and nutrition in eating disorders. *Int J Eating Disord* 1997; 21: 195-199.