On Oral Health in Young People with Asthma

Akademisk avhandling

som för avläggande av odontologie doktorsexamen kommer att offentligen försvaras
i hörsal Arvid Carlsson, Academicum, Medicinaregatan 3, Göteborg,
fredagen den 17 december 2010, kl. 13.00

av

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Avhandlingen är av sammanläggningstyp och baseras på följande fyra delarbeten:

I. Stensson M, Wendt L-K, Koch G, Oldaeus G, Birkhed D. Oral health in pre-school children with asthma. Int J Paediatr Dent 2008;18:243-250.

II. Stensson M, Wendt L-K, Koch G, Nilsson M, Oldaeus G, Birkhed D. Oral health in pre-school children with asthma – followed from 3 to 6 years. Int J Paediatr Dent 2010;20:165-172.

III. Stensson M, Wendt L-K, Koch G, Oldaeus G, Lingström P, Birkhed D. Caries-related factors and plaque-pH response in adolescents with long-term asthma. Caries Res, accepted for publication.

IV. Stensson M, Wendt L-K, Koch G, Oldaeus G, Ramberg P, Birkhed D. Oral health in young adults with long-term, controlled asthma. Acta Odontol Scand, accepted for publication.

Göteborg 2010

UNIVERSITY OF GOTHENBURG

On Oral Health in Young People with Asthma

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Objective. The aim of this thesis was to investigate the oral health of young individuals with and without asthma. ***Material.*** In Study I, a group of 3- (n=66) and 6-year-old children (n=61) with asthma and two healthy control groups (n=62 and n=55 respectively) participated. In Study II, 3-year-old children with asthma (n=64) and a healthy control group (n=50) were followed from 3 to 6 years of age. In Study III, adolescents with severe and long-term asthma (n=20) and a healthy control group (n=20) were included. In Study IV, young adults with long-term asthma (n=20) and a healthy control group (n=20) participated. ***Methods.*** A clinical examination was performed and the prevalence of caries, gingival inflammation, plaque and the numbers of mutans streptococci and lactobacilli in saliva were determined. In Study II, the caries increment between 3 and 6 years of age was investigated. A radiographic examination was conducted in all the studies, apart from in the 3-year-old children. The participants or their parents were interviewed regarding various oral health-related factors. To assess the caries risk, a computer program, the "Cariogram", was used. In Studies III and IV, the salivary secretion rate and plaque pH, after a sucrose rinse for up to 40 min at two approximal sites, were measured. In Study IV, gingival crevicular fluid, periodontal pockets and the plaque formation rate were determined. ***Results.*** In Study I, the mean ± SD dfs in the 3-year-olds with asthma was 1.4±3.2 compared with 0.5±1.2 in the control group ($p<0.05$). The corresponding figures for the 6-year-olds were 2.5±3.9 and 1.8±2.8 (NS). The 3-year-old children with asthma had more gingival bleeding than the healthy controls ($p<0.05$). Children with asthma reported a higher consumption of sugar-containing drinks and were more frequently mouth breathers than the control groups ($p<0.05$). Children with asthma and an immigrant background had a higher mean dfs than children with an immigrant background in the control group. In the follow-up study (Study II), the increment of initial caries was higher for children with asthma compared with the control group ($p<0.05$). At both 3 and 6 years of age, asthmatic children were more frequently mouth breathers than their controls (only statistically significant in the 6-year-olds). In Study III, the mean ± SD DFS was 4.9±5.5 in adolescents with asthma compared with 1.4±2.3 in the control group ($p<0.01$). The Cariogram data in the control group showed that 75% had a "chance of avoiding caries" compared with 54% in the asthma group ($p<0.01$). A lower initial and final pH in plaque was found in the asthma groups (only statistically significant in Study III). More gingival inflammation ($p<0.05$), more frequent mouth breathing (NS) and a lower salivary secretion rate were found in the adolescents and young adults with asthma compared with the control groups ($p<0.05$). The mean ± SD DFS was 8.6±10.6 in the young adult asthma group compared with 4.0±5.2 in the controls (NS). ***Conclusions***. The results of this thesis indicate that young individuals with asthma have a higher caries prevalence, more gingival inflammation and are more frequently mouth breathers compared with healthy individuals of the same age. In younger children with asthma, a higher intake of sugary drinks was more common and, in the older age group (adolescents and young adults), a lower salivary secretion rate and plaque pH were found in the asthma groups compared with the control groups.

Key words: Adolescents, Asthma, Caries, Cariogram, Gingival bleeding, Mouth breathing, Oral health, Plaque-pH, Saliva secretion

ISBN 978-91-628-8173-3