

0553 A Randomized Controlled Trial on Root Caries in Institutionalized Elders

H.P. TAN, E.C.M. LO, Y. LUO, J.E. DYSON, and E.F. CORBET, University of Hong Kong, Hong Kong

OBJECTIVES: To compare the effectiveness of four methods in preventing new root caries in elders.

METHODS: This study was a randomized controlled trial on institutionalized elders aged 60-89 years in Hong Kong. A baseline examination was conducted on elders living in 21 elderly homes. Status of their tooth roots was recorded. Elders having at least 5 teeth with exposed sound root surfaces and no serious medical problems were randomly allocated into one of four prevention groups: Group 1- receiving individualized oral hygiene instruction (OHI) only; Group 2 - OHI and applications of sodium fluoride (NaF) varnish every 3 months; Group 3 - OHI and applications of chlorhexidine (CHX) varnish every 3 months; and Group 4 - OHI and annual applications of silver diamine fluoride (SDF) solution. Status of their root surfaces was assessed annually by a masked independent examiner.

RESULTS: 306 elders were examined at the baseline. After two years, 227 elders (74%) were reviewed. The mean numbers of root surfaces with new caries found at the two-year examination in Groups 1, 2, 3 and 4 were 2.00, 0.89, 1.04, and 0.72, respectively (ANOVA, $p < 0.001$). The mean number of root surfaces with new caries was similar in Groups 2 to 4 (Scheff's multiple-comparison, $p > 0.05$). Elders receiving only OHI developed more new root caries surfaces (Scheff's multiple-comparison, $p < 0.05$) than the elders in the SDF solution, NaF or CHX varnish groups. Moreover, elders wearing removable partial dentures (ANCOVA, $p = 0.044$), those with higher visible plaque index scores (ANCOVA, $p = 0.017$) and those having higher baseline root caries levels (ANCOVA, $p < 0.001$) developed more new root caries.

CONCLUSIONS: SDF solution, NaF and CHX varnish were found to be more effective than OHI only in preventing new root caries in institutionalized elders over two years.

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