Abstracts on this page have been chosen and edited by Dr Trevor Watts

Periodontics; cardiology

Periodontal disease and coronary heart disease risk

Hujoel PP, Drangsholt M et al.
JAMA 2000; 284: 1406-1410

Some studies have suggested that periodontal diseases may increase the risk of coronary heart disease (CHD), but data from a large prospective epidemiological study provided no convincing support for this hypothesis.

This study considers 8032 dentate adults aged 25-74 yrs with no reported cardiovascular disease history who were recruited as a part of the US First National Health and Nutrition Examination Survey in 1971-1975. Subjects received medical and dental examination and were followed up to 1992.

Known cardiovascular risk factors which were recorded included blood pressure, serum cholesterol, diabetes, level of physical activity, body mass index, alcohol consumption and smoking habits. Using Russell's Periodontal Index, 3752 subjects were assessed as periodontally healthy, 2421 had gingivitis and 1859 had periodontitis.

During follow-up, 1265 subjects had at least 1 CHD event, including 468 fatalities; 1022 subjects were hospitalized with a CHD diagnosis, including 155 who had coronary revascularization procedures. After adjustment for known risk factors, prior gingivitis was not associated with CHD (hazard ratio 1.05, confidence interval 0.88-1.26), and periodontitis had a trend towards association which did not reach significance (1.14; 0.96-1.36). Associations with CHD fatalities were also non-significant.

Health resource allocation

Relationship between utility values and willingness to pay in patients undergoing orthognathic treatment

Cunningham SJ, Hunt NP
Community Dent Health 2000; 17: 92-96

There was reasonable agreement between two different methods of assessing how patients valued proposed treatment.

Quality of life is difficult to assess, but is an important aspect of many treatments which do not appear to affect life expectancy. Two methods of assessment were compared in 40 patients who had consented to combined orthodontic and surgical treatment for dento-facial deformities. Cost-utility analysis (which may be expressed in quality adjusted life years - QALYs), and contingent valuation (as willingness to pay - WTP) were investigated. The authors state that the latter method may be preferable in theory because it is less restricted in its application.

Subjects had a mean age of 24 yrs and 2/3 were female. For cost-utility analysis, the 'standard gamble' method was used to assess the risk (between 0 and 1) which subjects found acceptable. The lower the acceptable risk, the higher was the utility value. Mean utility value was 0.73, which approximated to a gain of 13.5 QALYs. WTP was assessed in £1000 increments up to £15000. Median WTP was £5000 and mean WTP was £6833. The correlation between the 2 measures was –0.46 ($P < 0.01$), and the authors consider that they may be combined for ascertaining the strength of patient preference for a treatment.

Healthcare delivery

Use of dental care by HIV-infected medical patients

Coulter ID, Marcus M et al.
J Dent Res 2000; 79: 1356-1361

Oral problems are frequent in patients with HIV infection, but only 42% of a probability sample of such patients in the USA had seen a dental health professional in the previous 6 months.

Many HIV studies have been in non-random cohorts, but in this study 2864 subjects out of a US national sample of 4042 eligible persons were interviewed. The sample represented a population of about 231000 HIV-infected patients. Of subjects interviewed, 58% had a usual source of dental care, and 65% had used it in the previous 6 months; of the 42% without such a source, only 12% had visited a dentist. In addition, 74% of those whose source of care was an AIDS clinic made use of it, compared with 65% using a dental practice.

During the preceding 6 months, women were less likely than men to have seen a dentist (35% v. 44%) and African-Americans showed less use than other ethnic groups. Higher educational status was associated with greater use, as was living in the west of the country. Usage level also varied among HIV exposure groups: 48% for male homosexuals, 42% for IV drug users, 35% for heterosexuals, and 25% for other groups such as blood transfusion recipients. There was no correlation of dental attendance with CD4 count, although oral health effects increase as this falls.

Orthodontics; preventive dentistry

Fluoride-releasing elastomerics — a prospective controlled clinical trial

Banks PA, Chadwick SM et al.
Eur J Orthod 2000; 22: 401-407

This adjunct provided a useful reduction of enamel decalcification during fixed appliance treatment.

Prevention of enamel decalcification during orthodontic treatment is difficult: fluoride mouthrinses are subject to varying compliance, and enamel sealants and fluoride-releasing orthodontic adhesives are unsatisfactory. In the present study, fluoride release by elastomeric modules and chains was tested in 49 patients (782 teeth; mean age 15.5 yrs) who were compared with a control group of 45 patients (740; 16.5). Patients were all instructed to use twice-daily brushing and a fluoride mouthrinse.

Decalcification was scored at completion of orthodontic treatment. In the control group 73% of patients had some decalcification, and in the experimental group, 63%. In the former group, 26% of teeth showed some decalcification, and in the latter, 16%. Enamel decalcification was also more severe in the control group.

The authors consider the improvements to be of clinical value, but point out that there are two slight short-comings: first, the fluoride releasing elastomerics tended to lose their elastic properties within 2-3 weeks, and therefore needed more rapid replacement; and secondly, they were less elastic than ordinary elastomerics and it was not possible to use them in figure-of-eight ligating.