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Advances in the behavioural and public health aspects of periodontitis.

Group D Consensus report of the fifth European workshop in periodontology

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The focus of this group was to review and analyse information relating to public health and health behaviour regarding periodontal diseases. This included the examination of relevant epidemiological, clinical, behavioural and economic issues to establish the state of current knowledge, identify areas of study, recommend action and suggest appropriate research endeavour.

Three papers were reviewed. The first consisted of a broad overview of the impact of preventive programmes upon the epidemiology of periodontal diseases (Gjermo 2005). The second was an extensive review of both oral health and health management literature, presenting cost-benefit, cost-effectiveness and cost-utility analyses and their relevance in the evaluation of the outcomes of periodontal prevention and therapy (Bragger 2005). The final paper was a classically structured systematic review of socio-economic factors in the manifestation and treatment of periodontal diseases (Klinge & Norlund 2005). After discussion and amendment, the papers were accepted.

Important matters quickly emerged.

- The substantial difficulties in making meaningful comparisons across different epidemiological studies of periodontal diseases.
- The value of including sound economic data, in addition to clinical data, in the assessment of preventive and therapeutic programmes.
- The observation that revealing the nature of the inter-relationship between disease and socio-economic issues was confounded, in part by study designs and more significantly by the overwhelming effects of smoking on periodontal health.

Such was the coincidence of the material analysed; the group debated the papers in parallel. From the conclusions that were drawn, the following questions were raised, and the actions recommended by the group are therefore presented in an integrated fashion.

Questions Addressed and Recommended Action What kind of epidemiological data on periodontal diseases are needed?

In noting the lack of coherence in epidemiological approaches that made it difficult to draw conclusions across studies, it is recommended that epidemiological studies conducted to assess prevalence and incidence should include and report on:

Consensus Report

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- population samples representative for the defined aims;
- measurable parameters that are universally recognizable in order to define the disease in a consistent and reproducible way;
- well-defined socio-economic data, including issues such as education, health attitudes and behavioural habits, using scales appropriate for the (sub)population studied when applicable; and
- cumulative frequency analysis as well as patient-centred outcomes.

What is the nature of the studies needed to conclude that new preventive, diagnostic and intervention measures are truly beneficial for a society?

Future clinical trials should include economic parameters as well as patient-centred outcomes.

Do periodontal preventive programmes or campaigns have an effect on a population level?

There is evidence showing that an appropriate oral hygiene level is effective in reducing the prevalence and severity of periodontal diseases on a population level. Data show that populations in countries with an existing emphasis on prevention have a better

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periodontal condition. However, changes in periodontal disease levels as assessed in epidemiological studies cannot be attributed to single programmes or campaigns. These activities usually trigger a cascade of events that, together, combine to lead to the improvement observed in the periodontal health in the society.

What is the relationship between socioeconomic factors and the prevalence of periodontal diseases?

Based on an analysis of relevant studies, with designs that have included smoking in their analysis, the socio-economic variables hitherto associated with periodontal diseases in fact appear to be of less importance than smoking per se. Data in non-smokers have shown that educational level can have an impact on periodontal diseases.

How can the economical aspects of providing oral health care be evaluated in periodontal research?

In order to conclude that preventive, diagnostic or therapeutic measures are truly beneficial for the society, there has to be clarity in the use of the relevant terminology.

Efficacy is defined as the probability of an intervention being beneficial to patients provided under ideal conditions.

Effectiveness concerns the care provided to the general population under conditions found in practice.

A *cost–benefit* analysis weighs all costs against all consequences of an intervention in monetary units.

A *cost-effectiveness* analysis balances cost in monetary units against the outcome presented in non-monetary units, i.e. clinical parameters or survival.

A *cost–utility* analysis weighs monetary costs against consequences represented in a respective utility (e.g. survival of a tooth with/without recession, mobility, sensitivity, aesthetic impairment).

The allocation of available resources to achieve the best possible outcomes involves the utilization of instruments such as cost–benefit, cost-effectiveness and cost–utility analysis in clinical trials. Clinical endpoints with different quality outcomes can thereby be related to the monetary costs involved to reach that respective condition. Cost–utility analysis will allow the prioritization of the allocation of resources so as to emphasize preventive measures.

Has it been shown to be cost effective to have a preventive programme for periodontal diseases on a population level?

Thus far, an economic benefit from extensive periodontal programmes aimed at prevention of periodontal diseases in a general population has not been reported. An indirect benefit of the programs, however, could be seen for some subgroups related to caries reduction.

On a population level, is there an economic advantage from the use of genetic and/or microbiological testing for managing periodontal diseases?

There is currently no data supporting the cost–benefit advantage of using these tests for population screening.

Currently what are the core messages to oral health professionals and policy makers regarding the prevention and treatment of periodontal diseases?

Three matters are highlighted:

• An appropriate oral hygiene level is effective in reducing the prevalence and severity of periodontal diseases on a population level. Data imply that smoking cessation will also have a favourable impact on periodontal diseases, including cost savings.

- Accumulating evidence, derived from epidemiological and intervention studies, indicate emerging relationships between chronic inflammatory/infectious diseases and such conditions as heart and lung diseases and stroke and perinatal outcomes. Periodontal diseases are the most prevalent chronic inflammatory diseases in humans and therefore may become another priority in a global health approach.
- With the limited resources available to governments and communities, cost-utility analyses indicate that oral health care programmes should include an emphasis on identified risk groups such as smokers, diabetics and other medically compromised groups.

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