Smoking and oral health

Cigarette smoking is the cause of many major general and oral health problems. Smoking is of major interest to dental professionals as it is known to be the risk factor for oral cancer and periodontitis. Smoking also has an unfavourable impact on healing and dental treatment outcome.

Epidemiology of smoking

Tobacco smoking is one of the major risk factors for many illnesses. It is the largest contributor to the burden on the health system.

Data from the Australian Institute of Health and Welfare 2001 show that smoking is prevalent in the Australian population, with nearly half (49%) being current or former smokers, in people 14 years and over (Figure 1), 21% of men and 18% of women smoke daily.

The highest rate of smoking is found in males aged 20-29 years (28%) and the highest rate for females is in the 30-39 years age group (24%). The lowest rate of smoking is found among those aged 60+ years. It is disturbing that smoking among adolescents (14-19 years) is greater than ever and is still rising, with more females (16%) taking up the habit than males (14%).

The majority of smokers (89%) start in their teenage years; therefore, it is important to target this age group with some prevention strategies.

Further information

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References

Periodontal disease (cont’d)

Among current smokers there is a dose-response relationship between the number of cigarettes smoked per day and the likelihood of periodontitis – the more cigarettes smoked, the greater the chances of developing periodontitis.

Smoking causes irreversible damage to the periodontium; however, the progress of the disease can be stopped and further damage prevented by cessation of smoking.

This information can be used as encouragement for smokers to quit the habit. Although the patient, as well as the dental professional, will still need to deal with some dental consequences of smoking, the patient can be reassured that the periodontal disease will not worsen.

Smoking cessation significantly benefits a person’s likelihood of tooth retention, but it may take decades for the rate of tooth loss to return to that observed in non-smokers.

Gingival tissue

Gingivitis is modified by several factors including smoking. Guns of smokers show:

- fewer gingival inflammatory changes
- reduced bleeding
- a thickened and fibrotic appearance

The gingival changes are due to a suppressed immune response to plaque that masks the presence of periodontal disease. It is important that the dental clinician recognises the condition and performs a thorough periodontal examination to detect signs of periodontal disease.

Acute necrotizing ulcerative gingivitis (ANUG) occurs more frequently in smokers. Possible explanations for the increased frequency of ANUG in smokers include the vasoconstriction of gingival blood vessels, reduced activity of leukocytes and proliferation of anaerobic fusobacterium microorganisms.

Oral cancer

Studies continue to provide evidence of the strong correlation between smoking and oral cancer. The risk of oral cancer increases with increasing number of cigarettes smoked per year and number of years a person has smoked. After quitting smoking the risk of cancer reduces.

In Australia 3% of all cancers are oral cancers and the annual death rate from oral cancers is higher than that of cervical cancer. Smokers over 40 years of age who smoke one packet a day for 20 years have 4.4 times the risk of developing mouth cancer. The risk of oral cancers associated with smoking increases further with excessive alcohol consumption.

Because oral cancers in the early stages are often treated successfully by excision, it is important that dental clinicians are able to diagnose the early signs.

Early oral lesions are usually asymptomatic and can present as a small white or red area or an ulceration that does not heal for a prolonged period of time. In the final stages an oral cancer usually becomes symptomatic and widespread, with poor survival prognosis.

Other oral mucosal lesions

There are a number of mucosal lesions associated with smoking including leukoplakia and smokers keratosis.

Oral leukoplakia (white patch) is found six times more frequently in smokers than in non-smokers and is dose related. Smoking cessation or reduction has been found to cause regression or disappearance of the lesion.

Implant failure

Smoking has been found to be the most significant risk factor for implant failure, which is caused by impaired healing associated with smoking. The failure rate for smokers is 11% compared to 4.8% for non-smokers. Stopping smoking for as short a period as from one week before to eight weeks after the procedure can reduce the failure rate.

Tooth Extractions

Common oral procedures such as tooth extractions, are also known to be affected adversely by smoking. Tobacco smokers have a significantly greater incidence of complications after an extraction, for example alveolar osteitis.

Stained teeth with tartar buildup in smoker's mouth

Photo courtesy of Dr R Hirsch University of Adelaide

Dental aesthetics

Discolouration of teeth, restorations or dentures is a common complaint of many smokers. Early decay lesions (white spot lesions) and dentine are prone to discolouration; therefore, the discolouration is even more noticeable if prior white spot lesions are present, dentine is exposed or a patient’s oral hygiene is lacking.

Halitosis (oral malodour), which often creates serious personal and social embarrassment for the affected person, may also be associated with tobacco use.

 Ninety percent of cases not responsive to periodontal treatment occur in smokers.

Dentists’ role in smoking cessation

Smoking is a complex behavioural and psychological issue that must be dealt with in all aspects of health care including dentistry. Dental professionals should not only be able to diagnose smoking related diseases, but should play an active role in both preventing the initiation of smoking and in smoking cessation.

The ‘Five As’ principle of smoking cessation is being promoted by Quit Australia and can be easily adapted to any dental surgery environment. The self-explanatory flow chart included presents various options for how to deal with smokers.

Patient awareness

The majority of smokers are aware of smoking being a risk factor for many general health problems.

Many smokers are however not aware of the wide range of dental consequences of smoking. It is the role of the dental clinician to bring this issue to patients’ attention and ensure that an in-depth explanation is given. If this information is not given to the patient, it may be perceived as ‘supervised neglect’.

In spite of an increased awareness of the adverse effects of smoking on oral health, many patients will continue to be smokers; however, they will better understand the reasons for a possibly less than optimal outcome of dental treatment and prognosis.

Failure of some patients to act on advice on smoking cessation should not discourage the dental clinician to continue providing this type of service to patients. Quitting is a process and not a single event. On average, at least five or six attempts to quit are made by a smoker before being successful, and all attempts need to be perceived as a learning experience for all involved.

Dental clinicians need to be aware of the patient’s smoking status and steps undertaken by the patient to quit. They also need to provide the patient with appropriate information on the consequences of smoking for oral health and support the patient in the smoking cessation process.

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