

Periodontics

Perspectives of Current Ideas, Techniques and Clinical Concept
in Periodontics and Restorative Dentistry

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Periodontal Factors for Predicting Tooth Loss

The value of periodontal treatment can be measured in many ways. One measure is to determine prognosis for periodontally affected teeth and overall prognosis. There are many factors that influence the long-term prognosis of periodontally compromised teeth. Among those are: clinical factors, genetic, radiographic, medical and environmental.

The importance of determining prognosis impacts every treatment decision that is made for individual teeth as well as groups of teeth. An accurate prognosis is most important when other aspects of treatment are necessary such as prosthetic cases where use of implants versus natural teeth is a common consideration. Commonly held beliefs about what factors affect prognosis and how important they should be considered has been evaluated.

Traditionally, many parameters can be considered for individual tooth prognosis:

- percentage of bone loss
- probing depth
- distribution and type of bone loss
- presence and severity of furcations
- mobility
- crown to root ratio
- root form
- pulpal involvement
- caries
- tooth position and occlusal relationship
- strategic value
- therapist knowledge and skill

continued on next page

Overall prognosis can also be considered by various parameters:

- age
- medical status
- rate of progression
- patient cooperation
- economic consideration
- therapist knowledge and skill
- etiological factors
- oral habits

Many studies have been produced over the last 30 years that have tried to separate personal periodontal training, judgment and past experiences from those factors statistically associated with increased bone loss and tooth loss. For example, age is often considered a significant parameter to be used in establishing prognosis, however several studies have shown that severity is independent of age. Another factor is gender which has proven not to be predictive of tooth loss. For individual teeth, molar teeth were strongly associated with tooth loss so that molar teeth with the same amount of bone loss as non-molar teeth have a definite poorer prognosis. As expected the greater amount of residual supporting bone is associated with a better prognosis. An unusual finding was that for any two teeth that have the same amount of residual supporting bone, the tooth that has the greater infrabony component has the lowest probability of tooth loss.

There are other non-clinical parameters that must be considered. Smoking and diabetes have been linked with a poorer periodontal prognosis. Another factor that has been linked for predictive value is a genetic factor, IL -1 (interleukin -1). This genetic variable has been associated with patients more likely to have severe periodontitis. In fact, recent studies have indicated that by itself there is a 2.7 times increase in risk of tooth loss to periodontal disease in patients with a positive IL - 1 and in combination with a patient who has a heavy smoking habit there is a 7.7 times increase. Studies have also shown, however that in patients who are IL -1 positive, non-smokers there can be long-term successful maintenance with minimum tooth loss.

For IL - 1 positive heavy smokers none of the above listed clinical parameters is significantly related to tooth loss. In IL - 1 negative patients, however initial prognosis, furcation involvement, mobility, probing depth, crown to root ratio and percent bone loss were significant factors in future tooth loss.

Further testing for genetic markers continues as there are many recent and current studies trying to identify those genetic factors that may play a role in the onset and severity of periodontal disease.

Next Issue: Genetic Factors and Periodontal Disease

Do you have suggestions for future topics? Call my office or e-mail your ideas.

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