

Abstract

Objective. The aims of the present study were 1) to evaluate the percentage of recurrent caries with respect to the estimated caries risk profile obtained by Cariogram, 2) to evaluate the quality of restorations in a Saudi population with several restorations and 3) to determine the additional value of bitewing radiographs as an aid to quality evaluation. **Material and methods.** 803 restorations were examined in 100 adults according to the United States Public Health Service USPHS/Ryge criteria. Salivary and microbiological factors, dietary habits and plaque index were obtained. The Cariogram was used to evaluate the risk profiles. Bitewing radiographs of class II (n = 281) were taken to examine the marginal integrity and the anatomic form proximally. **Results.** The patients were categorised according to “the chance of avoiding caries” into three risk groups: 0-20% (n = 38), 21-40% (n = 28) and 41-100% (n = 34). ANOVA revealed statistically significant differences between the risk groups with respect to the recurrent caries ($p < 0.05$). A high percentage of the total restorations (56%) were diagnosed with recurrent caries. The quality of anatomic form and surface texture was unacceptable in the majority. After adding the evaluations of class II bitewings, the percentage of unacceptable restorations increased by 28% and 17% with regard to marginal integrity and anatomic form respectively ($p < 0.001$). **Conclusions.** Recurrent caries was related to the percentage “chance of avoiding caries” estimated by the Cariogram. The importance of bitewings was emphasised as an aid to quality evaluation. (*Acta Odontol Scand* 2010;68:122-8)