

Objectives

The incorporation of computational techniques and artificial intelligence in the area of biomedicine has made remarkable progress in the prevention and detection of diseases. Decision trees are a prediction model used in the field of artificial intelligence that provides a human expert information, a caries classification in this study, made by the system, generating rules that will support decision making.

Dental caries is one of the most prevalent infectious diseases in patients and the diagnosis is made by dentists using clinical and radiological examination.

The aim of this study is to analyze the relationship between the Mount/Hume classification of caries and Orthopantomography x-ray.

Materials and Methods

The study was realized on fifty patients who attended to the triage of the School of Dentistry in the Complutense University of Madrid and performed by a faculty of the department of Conservative Dentistry. After clinical examination and radiological study, all the findings were uploaded in patient's chart, the data collected is sent to the University of Salamanca to be analyzed by Bioinformatics.

Results

Three decision trees were generated by the algorithm J48. Decision tree number two, associated the variables size and location of the lesion using the Mount/Hume classification and radiographic variable.

Conclusions

Decision trees are a simple tool that allows us to visualize and analyze the relationship between the Mount/Hume classification of caries and extraoral radiographic study.

Decision trees used in this study highlight the need for the use of the panoramic radiograph for classifying caries sizes 2, 3 and 4 and location 2 of Mount/Hume and not in sizes 0 and 1 that require more specific diagnostic tests.

- Oral Presentation 33

TITLE: Evaluation of the shades in the space ciel-ch of amaris composites

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Objectives

To evaluate color change parameters in space Ciel-ch of Amaris(VOCO®) dentin composite resin when adding its enamel colors

Materials and Methods

45 discs, 2mm thick and 6 mm in diameter were created of Amaris dentin shade, and divided in 5 groups: group1-shadeO1, group2-shadeO2, group3-shadeO3, group4-shadeO4 and group5-shadeO5. In each group (n=9) we added to the dentin shade disks, 1mm of Amaris enamel shade (TL, TN, TD), obtaining 3 discs per group of each enamel shade. The color parameters (L, c, h) were determined with the composite-resin light-cured, by a spectrophotometer EasyShade(Vita®), before and after adding the enamel shade. The results were analyzed by comparing the variances (ANOVA) with statistic package SPSS-v.15

Results

In groups 4 and 5, all enamel shades increased significantly its lightness (L) ($p < 0.001$). In group 3 there were no significant differences ($p = 0.08$), in group 2 there was only a significant increase in the shade TL ($p = 0.03$), and in group 1 there was an increase with the shade TL but a decrease with the shade TN and TD ($p = 0.02$). Regarding chroma (c), all 5 groups decreased significantly when placing the 3 enamel shades. As for hue (h) there was not significant decrease in groups 2 ($p = 0.05$) and 5 ($p = 0.17$). In groups 3 and 5, only the enamel shade TL presented significant differences ($p = 0.001$). In group 1, all 3 enamel shades presented a significant difference ($p = 0.002$). The correlation with Vita® shades was A3.5 for 2mm of dentin shades O1, O2 and O3, and A4 for shades O4 and O5. For 1mm of enamel shades, its correlation was A2 for TN, B1 for TL and A1 for TD.

Conclusions

The placing of 1mm thickness of enamel shade, decreased the chroma of the dentin shades. The shade TL increased the lightness but the shade TD did not decrease it.

- Oral Presentation 34

TITLE: Endodontic failure due to forgotten duct : a series of cases

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