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## Research on the correlation between the periodontal diseases with respect to different age groups and smoking

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It is a research involving the detrimental effect of smoking on the progression of periodontal disease with age. Data has been collected by itself for the last 6 years and categorized it with different parameters such as sex, age groups, smokers as well as non smokers, onset and frequency of smoking such as 1-10, 10-20 cigarettes a day. 647 cases have been studied so far, which gives the detailed results how smoking effects the wound healing and has an additive effect on progression of disease. Outcome and results have been matched with the various hypotheses. Frequency of smoking is directly proportional to the severity of disease throughout the studies but in age group 45-55, there is no significant rise in periodontal probing depth in women with increase in frequency of smoking. Periodontal examination of patients with a healthy periodontium and chronic periodontal disease were performed and saline rinses of 30ml were collected before instrumentation. 33 cases have been found without karatosis but increased periodontal depth. Delayed healing and infection have been seen in post surgical periods after implants in smokers. Data from Age Group between 25-45 years tells about the Patients who smoke have approximately twice the chance of having periodontal disease than non smokers. Xerostomia has been commonly found in almost all cases of smoking. So far, data has been recorded for almost 650 cases and our target is more than 1000 cases.

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## Effect of association of doxycycline in gel form and particulate autogenous bone: Histomorphometric analysis of bone repair in rat calvaria

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**Objectives/Aims:** The aim of the study was to evaluate histologically the association of 10% doxycycline in natrosol gel form and particulated autogenous bone on repair of simulated critical-size defects in rat calvaria.

**Method:** Fifty albino rats were selected and a 5-mm diameter defect was created in the calvaria of each animal. The animals were randomly divided into 5 groups (n=10) according to the material used to treat the defect: CO – Untrated, defect filled by a blood clot (control); DOX – 10% Doxycycline in natrosol gel; NAT – Natrosol gel; PAB – Particulate autogenous bone; PAB + DOX – Particulate autogenous bone associated with 10% Doxycycline in natrosol gel. Five animals from each group were euthanized at 4 and 8 weeks postoperatively. In the histomorphometric analysis, the amount of new bone formed was calculated as the percentage of the total area of the original defect. Statistical analysis of the results was performed using ANOVA and Tukey's tests ($p<0.05$).

**Results:** New bone formation was limited to the margins of the defect. No complete bone repair was found for any group. At 4 and 8 weeks, the group PAB + DOX showed high bone formation (38.59% and 47.86%, respectively), with statistical difference in comparison with the CO (19.52%) at 4 weeks and in relation to CO (18.80%), DOX (22.05%) and NAT (15.89%) at 8 weeks ($p<0.05$).

**Conclusion:** The association of 10% doxycycline in gel form with particulate autogenous bone significantly improved bone healing in critical-size defects in rat calvaria.

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