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Research Article

**STUDY TO KNOW THE BONE LOSS PATTERN BETWEEN  
NON SMOKERS AND SMOKERS PATIENTS****Dania Munir, Muhammad Hammad, Hafza Sana Ijaz**  
Faisalabad Medical University**Abstract:**

**Objective:** The purpose of this analysis was to determine the bone loss pattern found between non smoker and smoker patients who visited dental OPD.

**Study Design:** A prospective study.

**Place and Duration:** In the Dental department of Allied Hospital, Faisalabad for one year duration from July 2017 to July 2018.

**Methods:** Bone loss Pattern was determined on the basis of vertical, angular and horizontal defect by taking peri-apical and OPG radiographs. A total of 1500 patients were treated and examined by completing periodontal examination forms and measuring depth of dental pocket.

**Results:** Patients had more bone loss than non-smokers, but unlike other bone defects, more horizontal bone patterns were observed in both smokers and non-smokers.

**Conclusion:** From this analysis it was concluded that Smokers have more bone loss than non Smokers.

**Key Words:** Horizontal bone defect, Angular bone defects, Vertical bone defect, Non-Smoker, Smoker.

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**INTRODUCTION:**

Smoking enhances the chances of gum disease. Smokers have more disability in the mouth than nonsmokers. The patient may have no bleeding symptoms or an inflamed gum due to immune response to normal bleeding is influenced by snuff consumption. Periodontal disease is classified by the formation of calculus formation, plaque, periodontium inflammation, cell formation, loss of alveolar bone. The study showed that there was no variation between non-smokers and smokers in age and / or plaque scores. Smokers had more loss of attachment, periodontal inflammation and increased periodontal pocket and loss of bone in more in smokers than non-smokers. Other studies have shown that smokers have more periodontal problems than nonsmokers. It is about periodontal problem and inflammation. Multiple longitudinal and transverse analysis have proved that loss of attachment, pocket depth and alveolar bone loss are more and severe in smokers than non-smokers. These smokers were found to be higher than the values belonging to forsythus of Bacteriods and were found to be 2.3 times more likely than non-smokers and older smokers than to host B. forsythus. Smoking affects the phagocytosis, neutrophils and chemotaxis from the oral cavity. The in vitro analysis of the tobacco effect on neutrophils showed a negative effect on oxidative burst and cell movement. Furthermore, it has been reported that the production of levels of perio-odontales of the antibodies required for the killing of phagocytosis and bacteria, especially the levels of IgG2, suggests that smoking decrease as compared to non-smokers against periodontitis, less protection against periodontal infection. The study on the periodontal destruction pattern in smokers showed that the anterior maxillae showed a periodontal pocket deeper than that of the other genera, and similarly, the maxillary palate showed a discovery and the face and mandibular regions showed that higher clinical ligament loss. In a

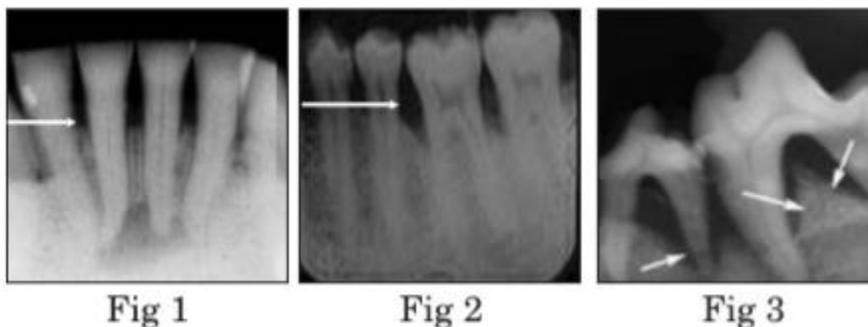
analysis of patients with pre-treated advanced periodontal disease, root planning and scaling and oral hygiene resulted in a significantly much decrease in bleeding and pocket depth in non-smokers. It was evaluated 6 months after the completion of treatment in smokers.

**MATERIALS AND METHODS:**

This prospective study was held in the Dental department of Allied Hospital, Faisalabad for one year duration from July 2017 to July 2018. In the periodontal section, total of 1500 subjects were examined. A self-administered interrogator was used to record the patient's dental history, medical history, complete periodontal health status and clinical evaluation. Of 1500 patients, 329 were smokers. In this study, a periodontal evaluation form was used to record the patient's oral health index. The periodontal probe was used as a sharp-looking device in this examination, a bar-shaped instrument calibrated with the shaft size and calibrated with a round blunt tip to measure the pocket. The subjects were selected randomly and the analysis was based on a quantitative evaluation. For each patient X-rays were taken and peri-apical and OPG radiographs were taken for the bone loss pattern. The inclusive criteria of the study were those who presented to the periodontic department with periodontal problems. Specific criteria Patients under 14 years of age, patients with medical dependence, patients with oral submucosal fibrosis, had limited oral clearance, so it was critical to control the palatal and lingual surfaces. Pregnant women, so they are not exposed to X-ray radiation.

**RESULTS:**

Using Research software and Survey Crafter Marketing together with Microsoft Excel, the results were calculated and evaluated. The analysis is entirely rely on quantitative analysis.



The results from the collected data (Figure 4) show that 63% of smokers had a horizontal bone loss pattern.

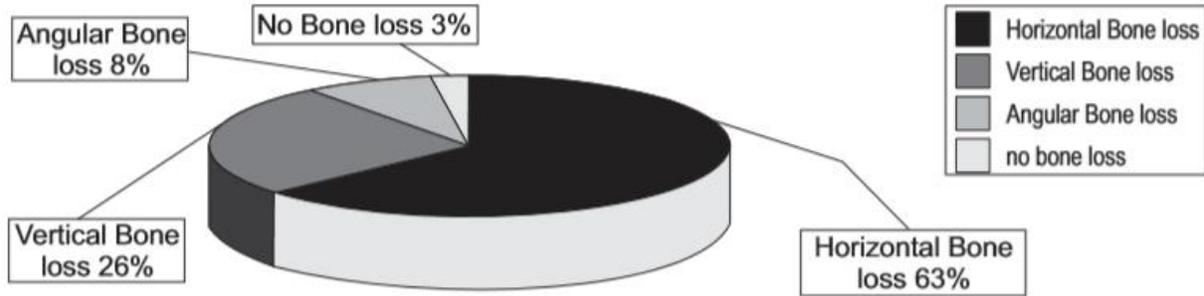


Fig 4: Habit Smoking

26% of patients had a vertical bone loss pattern and 8% showed an angular bone loss pattern. 4% of the patients were not exposed to bone loss.

Figure 5 shows that 66% of non-smokers did not cause bone loss. However, 24% of the patients showed a horizontal bone loss pattern. Vertical bone loss in 10% of patients and 1.20% of non-smokers experienced angular bone loss.

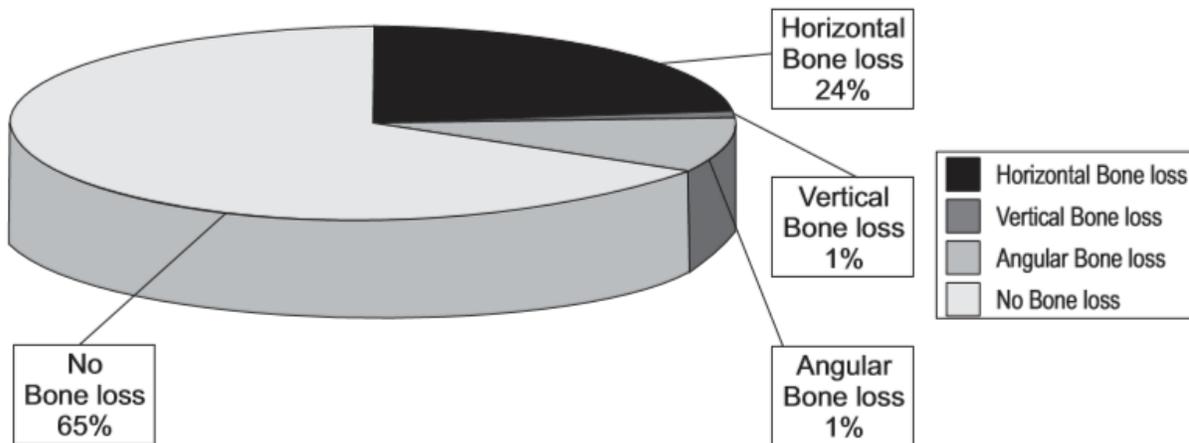


Fig 5: Habit Non Smoker

### DISCUSSION:

Clinical studies have shown a relationship between alveolar bone loss and smoking. The high chances of tooth loss can be attributed to the smoking direct effect on periodontal tissues. In general, smokers have more bone loss than non-smokers.

**TABLE 1: SHOWS VALUE OF EACH PATTERN OF BONE DEFECT FOR SMOKER PATIENTS**

Horizontal Bone loss	Vertical Bone loss	Angular Bone loss	No bone loss
0.243316	0.0989305	0.0306952	0.01

Mahuca et al. determined the degree of periodontal disease and its association with smoking habits. They reported more depth and additional loss in smokers. It has been shown that smokers who have been diagnosed with severe periodontitis show more binding in these conditions than non-smokers.

The difference in periodontal destruction pattern in smokers shows a local effect of smoking according to News and Urban studies. Preber and Gergstrom suggested that greater exposure of more local cigarette smoke than the palatal surface of the upper palate layer could lead to a significant increase in bagging. The results of this analysis showed that smoking caused 64% of the horizontal bone loss pattern. The vertical shape of the bone loss is 27% compared to

8% angular bone loss. The patients without bone loss were smokers who had just started smoking.

**TABLE 2: SHOWS THE VALUE OF EACH PATTERN OF BONE LOSS FOR NON SMOKER PATIENTS**

<b>Horizontal Bone loss</b>	<b>Vertical Bone loss</b>	<b>Angular Bone loss</b>	<b>No bone loss</b>
0.243316	0.0989305	0.0106952	0.68

It was surprising that 65% of patients without bone loss were observed, but the percentage of horizontal pattern of bone loss was higher than that of angular and vertical bone loss.

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