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EFFECT OF SMOKING CULTURE ON PERIODONTAL ATTACHMENT DAMAGE RADIOGRAPHICALLY EXAMINATION

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ABSTRACT

The prevalence of alveolar crest bone damage in premolars until the molar mandibular region using panoramic radiographs. Radiography panoramic is a radiodiagnostic aid that is recommended as a method to assess the shape of alveolar crest bone damage. The observational descriptive research method is based on digital panoramic radiograph examination of 30 samples with the range of age between 19 - 45 years old as the secondary data from the Dentomaxillofacial Radiology Department of Dental and Oral Hospital, Faculty of Dentistry, Prof. Dr. Moestopo (Beragama) University that were assessed as purposive sampling. The prevalence of alveolar crest bone damage in the premolar-molar mandibular region using panoramic radiographs was 63.3%. The average range on male was 1.8571 from premolar, while molar was 1.6667 with the horizontal shape of 43.3%. There was no significant correlation between the age differences and the alveolar crest bone damage with p value=0.346% (p>0.05).

INTRODUCTION

Alveolar crest bone damage is a defect where the distance between the cementoenamel junction and the alveolar crest bone is more than 2 mm1 which is a decrease in bone height in horizontal and vertical forms. [1]. In 2008, a research conducted by Kasaj et al. [2] towards 249 subjects with 500 panoramic radiographs of patients aged 20-80 years, the prevalence of vertical alveolar crest bone damage was 48.9%. According to the form of alveolar crest bone damage, a study by Jayakumar et al. [3] of the 150 orthopantomograms cases of chronic periodontitis patients in 2010, it was found that the prevalence of horizontal form was 92.2% of 3,107 teeth compared to vertical form 7.8% of 264 teeth. In 2012, a research by de Toledo et al. [4] showed the same result that the horizontal form was 8.9% more prevalent than the vertical form of 1.5%. Based on the background above, there is not much known prevalence of alveolar crest bone damage in regio premolar to molar mandibula with panoramic radiographs at the Dental and Oral Hospital, Dentistry Faculty, Prof. Dr. Moestopo University, with the aim of explaining the prevalence of alveolar crest bone damage.

FIGURE 1: Alveolar crest bone damage in vertical forms in teeth 47,46,45,44 and 34, 35, 36, 37. horizontal and vertical shapes. [5]

METHOD

Observational descriptive with cross-sectional approach. The research was carried out in the

laboratory of Dental Radiology, Dental and Oral Hospital, Dentistry Faculty, Prof. Dr. Moestopo University on January 29-30 2018. Using secondary data in the form of digital panoramic radiographs. The selected research subjects were digital panoramic radiographs as many as 30 photos belonging to male and female patients aged 19-46 years. Operational Data: - Panoramic Digital: X-RAY, - Brand: SIRONA- ORTHOPHOS, - Type: SR.90115FN, - SERIAL No.: 109250, - Model: 5968573 D3200, - Voltage: 90 KV / 12MA, - Program: Panoramic (P1), - Adults: 64 KV / 0.8 MA, - Operator's name: Wahyudin

RESULT AND DISCUSSION

Prevalence of Alveolar *Crest* Regio Premolar - Molar Mandibula Bone Damage on Panoramic Radiographs

Table 1. Prevalence of Alveolar Crest Bone Damage

Variable	Amount	Prevalence
Alveolar crest (> 2mm) bone damage was found	19	63,3%
No *Alveolar crest* (> 2mm) bone damage was found.	11	36,7%
Total	***30***	100 *%*

From the results of the study, the obtained data on the prevalence of bone damage in alveolar crest region premolar to molar mandibular on panoramic radiographs was 63.3%. The prevalence of alveolar crest bone damage in horizontal and vertical forms in men and women can be seen in table 2: based on the results of table 1 the number of alveolar crest bone damage (> 2 mm) were 19 samples.

Table 2: Distribution of Independent Variables Which Experienced Alveolar Crest Bone Damage (N = 19)

Independent Variables	Categories	N	%
Age	19-30	8	42,1
	31-46	11	57,9
Gender	Male	12	63,2
	Female	7	36,8
***Alveolar crest* bone damage forms**	Horizontal	13	68,4
	Vertical	6	31,6

Table 2 shows that those who suffered alveolar crest bone damage aged 19 - 30 years old were 42.1%, those of age 31 - 46 years old were 57.9%. The percentage for male subjects was 63.2%, higher than the female 36.8%. For the form of horizontal alveolar crest bone damage was 68.4%, higher than the vertical damage.

Table 3: Mean Results of Alveolar Crest Bone Damage Based on Regio Premolar - Molar Mandibula

Regio Premolar - Molar Mandibula	N	Mean	**Standard Deviation**
Left Premolar -Molar Mandibula	15	1,6667	0,48795
Right Premolar - Molar Mandibula	15	1,6000	0,50709

Table 4: Relationship between Age and Alveolar Crest Bone Damage

Age (Years)	**Alveolar *Crest* Bone Damage**				Total	PR	PR 95% CI	P-value
	Found (>2mm)		None (<2mm)					
	N	%						
19-30	8	66,7	4	33,3	12	1,091	0,633-1,879	0,757
31-46	11	61,1	7	38,9	18			
TOTAL	19		11		30			

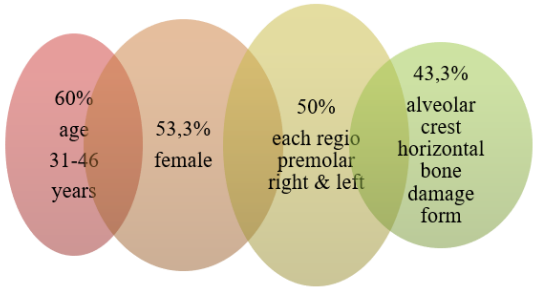
Table 5: Relationship between Gender and Alveolar Crest Bone Damage

Gender	**Alveolar *Crest* Bone Damage**				Total	PR	PR 95% CI	P-value
	Found (> 2mm)		None (< 2mm)					
	N	%						
Male	12	85,7	2	14,3	14	1,959	1,080-3,553	0,017
Female	7	43,8	9	56,3	16			
TOTAL	19		11		30			

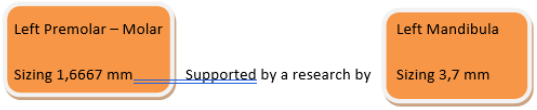
The prevalence of alveolar crest bone damage obtained from this study is 63.3% of 30 research subjects aged 19-46 years old (Table 1). The results are quite high compared to the research conducted by Gjermo et al. 27.6% (Singh, 2017), Kasaj et al. (Kasaj, 2008) 48.9% while Indurkar et al (Indurkar, 2016) showed the highest bone damage prevalence of 83.1% but using the latest X-ray machine namely Cone Beam Computer Tomography. The large number of the incidence of alveolar crest bone damage in adult patients aged 19-46 years old is the fact that periodontitis is an age-dependent disease. Severement level of bone damage and attachment are caused by the length of exposure to local factors (Zardawi, 2014). The involvement of men who experienced alveolar crest bone damage as many as 12 samples (63.2%) in this study was greater than women as many as 7 samples (36.8%) (Table 2). Similar to the results of research by Singh et al. (Singh, 2017), periodontal bone damage is more common in men (62.5%) than in women (37.5%). This is because men have a tendency of smoking

habits and poor oral hygiene which is characterized by the large amount of plaques and calculus in the oral cavity. Women are more aware and attentive to their oral hygiene and regularly check their teeth to the dentist (Ashwinirani, 2015).

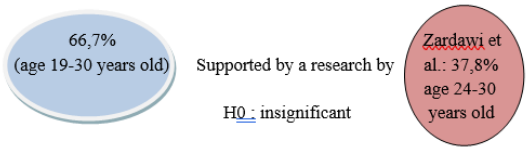
Observations regarding Alveolar Crest Bone Damage (n = 30)



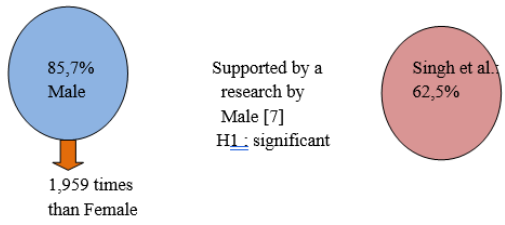
Mean Results of Alveolar Crest Bone Damage Based on Regio Premolar - Molar Mandibula: (Table 3)



Relationship Between Age and Alveolar Crest Bone Damage (Table 4)



Relationship Between Age and Alveolar Crest Bone Damage (Table 5)



CONCLUSION

The culture of smoking mostly has a negative effect on alveolar bone height and density, with the risk of alveolar bone loss. In this study, X-Ray Panoramic images of the mandible were found in the prevalence of alveolar crest bone damage in premolar to molar, in men aged between 19-30 years.

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