

# PREVALENCE OF TORUS PALATINUS AND TORUS MANDIBULARIS IN JORDANIAN POPULATION

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## ABSTRACT

*The objective of this study was to determine the prevalence of torus palatinus and torus mandibularis in relation to age and gender among patients who attended Dental Department of Queen Alia Military Hospital in Jordan.*

*In this study 1218 subjects were examined for the presence of tori by inspection and palpations.*

*Out of 1218 subjects 28.7% had torus palatinus or mandibularis. The highest percentage (44.1%) of tori were in the age group of 31-41 years. Female percentage with either tori was higher (39.0%) than males (20.0%).*

**Key words:** *Torus palatinus, torus mandibularis*

## INTRODUCTION

The tori are exostosis that are formed by a dense cortical bone and limited amount of bone marrow, and they are covered with a thin and poorly vascularized mucosa. It represent an anatomical variation rather than a pathological condition and they usually become apparent during second or third decade of life.

Torus palatinus (TP) is usually located along median palatine suture involving both processi palatine. Torus mandibularis (TM) occurs most commonly in small size. They are often located at the canine to premolar area.

There is no specific etiology but there are many predisposing factors according to many researchers<sup>7,8,9,12</sup> such as genetic, environmental and nutritional. The aim of this study was to determine the prevalence of torus palatinus and torus mandibularis in relation to age and gender in patients attending Queen Alia Military Hospital.

## METHODOLOGY

A total of 1218 subjects attended dental department of Queen Alia Military Hospital from 1<sup>st</sup> Jan to 31 March

2010 and they were also examined for the presence of TP and TM.

The presence of tori were confirmed by clinical examination and palpation. Subjects were divided according to gender and were divided into 6 age groups namely 11-20, 21-30, 31-40, 41-50, 51-60 and  $\geq 61$  years.

## RESULTS

In the present study the age of the patient with tori ranged from 16 to 69 years, majority (30.0%) of patients were in the age group of 21-30 years. The age of male patients ranged from 16 to 65 years while those of female from 18 to 69 years.

The prevalence of tori in age group ranged from 8.4% in age group 11 to 20 years to 44.1% in age group 31 to 40 years (Table 1).

In this study TP, TM were significantly more prevalent in females than in males (39.0% and 20.0% respectively). The overall prevalence was 28.7% (Table 2).

A Singaporean study is the only study that shows the same frequency of torus palatinus in both sexes.<sup>20</sup> There is no certain explanation for the higher prevalence of tori in females but genetics may be suggested as major factor.<sup>3,4,7,9,13,15,21,23</sup>

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TABLE 1: PREVALENCE OF TORI ACCORDING TO AGE

Age/year	Male+female	M+F with tori	Prevalence
11-20	169	14	8.4
21-30	435	133	31.5
31-40	221	98	44.1
41-50	170	63	37.1
51-60	132	21	15.4
≥ 61	91	21	23.1
Total	1218	350	28.7

## DISCUSSION

Oral tori have been defined as slow growing, osseous outgrowths at the mid line of the hard palate and at the lingual surface of the mandible. Tori are anatomical variant and has been termed exostosis.<sup>27,28</sup> Studies showing TP and ranging from 1.4 to 66.0% in different populations is given in Table 3.

Tori have been consistently seen more frequently in Mongolians than in the Caucasians.<sup>37,38</sup> Costich stated that tori may be less common in blacks than in whites.<sup>39</sup> Yaacob et al found a high rate of 24.4% of torus palatine in Malaysian but low prevalence of torus mandibularis (2.2%).<sup>38</sup> This difference in prevalence in different

TABLE 2: AGE AND GENDER DISTRIBUTION OF PATIENTS

Age/years	Male	Male+tori	%	Female	Female+tori	%
11-20	85	7	8.2	84	7	8.3
21-30	183	32	17.5	252	131	51.9
31-40	92	26	28.3	129	72	55.8
41-50	67	26	38.8	103	37	35.9
51-60	56	13	23.2	76	8	10.5
61 ≥	45	6	13.3	46	15	32.6
Total	528	110	20.0	690	270	39.0

TABLE 3: COMPARISON OF FINDINGS OF TP IN VARIOUS POPULATIONS

Year of publication	Population	Sample size	Female %	Male %	Prevalence
1953	USA (24)	2478			20.9
1966	Yugoslavia (2)				49.7
1977	Brazilian Indian (17)	200			10.0
1984	Singapore (20)		48.0	48.0	48.0
1987	KSA (25)	1932			1.4
1988	German (8)	1317			13.5
1994	Norway (6)	1181	43.4	32.7	45.4
1999	Turkey (22)	86			45.4
2001	West Indians	212	7.9	4.7	6.6
2002	Thai (13)	1200	67.3	48.8	58.1
2005	Turkey (26)	1943	34.3	28.1	30.9
2006	Jordan (14)	338	47.0	14.0	29.8
2007	Turkey (44)	2660	5.7	1.8	4.1
2008	Japan (45)	113	24.6	7.5	17.0

populations may be due to ethnicity. It was reported that among similar ethnic groups living in different areas,<sup>6,16</sup> or different ethnic groups living in same areas have various prevalences of TP and TM.<sup>21,45</sup>

Large number of investigators have evaluated the effects of environmental<sup>7,12</sup> and genetic factors<sup>8,9</sup> including masticatory stress<sup>7,8,21</sup> and nutritional factors.<sup>6</sup> Dietary factors may have a role for the tori prevalence. Eggen and Natvig investigated the influence of nutrient in the etiology of tori.<sup>45</sup> The prevalence of TP and TM in this study correspond to the previous studies of Jordanian population.<sup>14</sup>

## CONCLUSION

The results of this study show significant relationship between the occurrence of tori and gender and support the findings that the etiological factors of tori are multifactorial namely genetic and environmental factors.

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