

Oral pathology prevalence in a Portuguese population of 9595 subjects

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Epidemiological studies are indispensable in the generation of etiological hypothesis and providing the frequency and/or patterns of disease occurrence at the societal level. The goal of this study was to evaluate the prevalence of oral lesions in a Portuguese population of patients from a general dental clinic in Lisbon.

MATERIALS AND METHODS

Retrospective, observational, transversal and comparative study, by analysis of 9595 patient records, dated between 2005-2016. Pathologies are presented by age and gender. Standard statistical parametric methods (ANOVA and Tukey-Kramer) were applied ($p < 0.05$).

RESULTS

We identified 1698 oral lesions in the 9595 subjects (17.7%) (fem=66.1%, male=33.9%) ($p < 0.05$). Burning mouth syndrome (BMS - stomatodynia) being the most frequent (18.4%) followed by lichen planus (15.5%), benign tumors (9.3%), intraosseous/odontogenic cysts (6.1%), candida spp infections (5.1%), geographic tongue (4.4%), traumatic ulcers (4.3%), frictional keratosis (4.1%), salivary retention cysts (4.1%), recurrent aphthae (3.7%), oral cancer (2.1%), reactive granuloma (1.9%), leukoplakia (1.8%) and others (table 1).

Distribution by gender is presented at table 2. There is a significant statistically difference between genders for BMS (85.3% female; 14.7% male), lichen planus 71.5% female; 28.5% male), benign tumors (64.6% female; 35.4% male), candida spp infections (80.5% female; 19.5% male), geographic tongue (64.9% female; 35.1% male), recurrent aphthae ulcers (71% female; 29% male), and oral cancer (30.6% female; 69.4% male) ($p < 0.05$).

By age group there is significant statistically difference between traumatic ulcers (22.2% <65 yrs; 77.8% ≥65 yrs), oral cancer (22.2% <65 yrs; 77.8% ≥65 yrs) and leukoplakia (28.6% <65 yrs; 71.4% ≥65 yrs) ($p < 0.05$). Table 3.

DISCUSSION

Despite the importance of epidemiological studies there are very few with correct methodology and design making difficult comparisons between publications. We couldn't find any study which includes pathologies without clinical lesions (BMS, trigeminal neuralgia, ...) and most don't states the cause for this absence (there are studies made through photos or biopsies reports...). There is also big discrepancies concerning studies on OLP; some authors classifies OLP as reticular, with or without dysplasia, include OLP at the same group as RA, Kovac-Kovacic M et al (Oral Pathol Med.2000,29(7):331-5) found 61.6% of oral lesions at their study population being 87% Fordyce granules, tongue varices and tongue fissures (!). This lack of diagnostic criteria is even worse when we discuss potential malignant lesions (PML) as leukoplakia with several authors considering 2 different entities leukoplakia with or without dysplasia. All those factors make impossible in a poster to make a sound discussion of our results against other published prevalence studies. We present the most relevant published papers at table 4.

Table 4 : Comparing the results of our study with the international literature (only pathologies common to various papers)

Author Date	Country	N (% total)	Method	Pathology n (%)												
				BMS / 29 cases of TN	OLP	B. Tumors / granulomas	Candida spp infections	Geographic Tongue	Traumatic ulcers	Frictional Keratosis	Recurrent Aphthae	Oral Cancer	Leucoplakia	Others (Leucoplakia, Candidosis, Lichenoid drug eruption)	Others (Leucoplakia, Candidosis, Lichenoid drug eruption)	Fordyce granules, Linea Alba, Leukoedema
Cardoso, I. and col.	Portugal Dental Clinic	1698 (17,7)	Clinical examination	341 (20.1)	263 (15.5)	190 (11.2)	87 (5.1)	74 (4.4)	73 (4.3)	70 (4.1)	62 (3.7)	36 (2.1)	31 (1.8)			
Ali, M. 2013 The Saudi Dental Journal	India University Dental Center	570	Clinical examination and biopsy	-	8 (1.4)	38 (6.6)	3 (0.6)	17 (3.0)	12 (2.1)	30 (5.3)	3 (0.5)		3 (0.6)		212 (37.2)	
Ghaneaie, F. 2013 Iran Red Crescent Medical Journal	Iran Gastrointestinal and Liver Diseases Research Center	416 (26.3)	Clinical examination and biopsy	-	12 (2.9)	-	29 (6.9)	-	-	14.3	21 (5.0)	-	2 (0.5)		52 (12.5)	Fordyce granules, Leukoedema
Cebeci, A. 2009 Med Oral Patol Cir Bucal	Turquia University Faculty of Dentistry	1170 (23.4)	Clinical examination	-	40 (3.4)	67 (5.7)	11 (0.9)	14 (1.2)	46 (3.9)	29 (2.5)	116 (9.9)	4 (0.3)	20 (1.7)		98 (8.4)	Morsicatio Buccarrum, melalin pigmentation, amalgam tatto
Al-Mobeeriek, A. 2009 Ann Saudi Med	India Clinic at college of Dentistry	454 (17.7)	Clinical examination	-	9 (1.9)	5 (1.1)	-	13 (2.9)	48 (10.6)	23 (5.1)	10 (2.2)	-	-		184 (40.5)	Fordyce granules, Leukoedema
Shulman, J. 2004 J Am Dent Assoc	USA Dep. of public health sciences, Baylor College of Dentistry	6003 (34.8)	Clinical examination	-	16 (0.3)	487 (8.1)	165 (2.7)	287 (4.8)	149 (2.5)	397 (6.6)	146 (2.4)	-	117 (1.9)		1497 (24.9)	Cronical bites, amalgam tattoo, scars, fistulae, lingual varcosis and inespecifics

CONCLUSION

Searching most used medical data bases we couldn't find any european clinical study on oral lesions prevalence with significant population samples since T. Axéll PhD thesis (1976). We need these european epidemiological data IF using correct diagnostic criteria and internationally recognized classifications to be able to generate etiological hypothesis and to access the frequency and/or disease patterns in our societies. The results of our study suggests the existence of multiple pathologies with a diagnostic set-up not much complex which must be diagnosed at routine dental consultations, if pre-graduate teaching and CEC focus in a systematic way the most prevalent and relevant lesions of the oral cavity.

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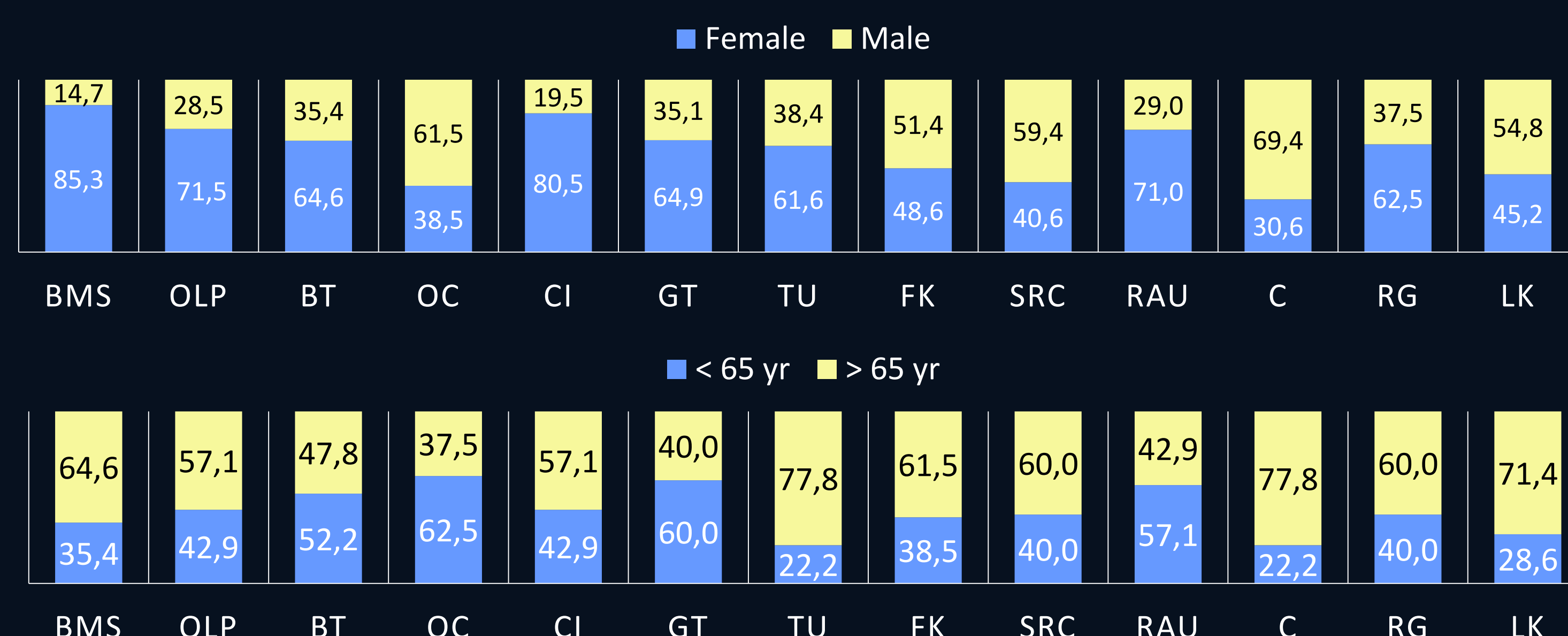
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Table 1 : Oral pathology prevalence in a Portuguese population of 9595 subjects

	n (%) 1698 (17,7)				Total	% / Pathology	% / Total pop.
	Female	%	Male	%			
Burning Mouth Syndrome	266*	85,3	46*	14,7	312	18,4	3,3
Oral Lique Planus	188*	71,5	75*	28,5	263	15,5	2,7
Benign Tumors	102*	64,6	56*	35,4	158	9,3	1,6
Odontogenic Cysts	40	38,5	64	61,5	104	6,1	1,1
Candida spp Infections	70*	80,5	17*	19,5	87	5,1	0,9
Geographic Tongue	48*	64,9	26*	35,1	74	4,4	0,8
Traumatic Ulcers	45	61,6	28	38,4	73	4,3	0,8
Frictional keratosis	34	48,6	36	51,4	70	4,1	0,7
Salivary Retention Cysts	28	40,6	41	59,4	69	4,1	0,7
Recurrent Aphthae Ulcerations	44*	71,0	18*	29,0	62	3,7	0,6
Oral Cancer	11*	30,6	25*	69,4	36	2,1	0,4
Reactive Granuloma	20	62,5	12	37,5	32	1,9	0,3
Leucoplakia	14	45,2	17	54,8	31	1,8	0,3
Salivary Gland Diseases	17	56,7	13	43,3	30	1,8	0,3
Trigeminal Neuralgia	19	65,5	10	34,5	29	1,7	0,3
Exostosis	5	38,5	8	61,5	13	0,8	0,1
Papule/Macule	8	66,7	4	33,3	12	0,7	0,1
Osteitis Condensans	10	90,9	1	9,1	11	0,6	0,1
Erythema Multiforme	8	80,0	2	20,0	10	0,6	0,1
Sjögren Syndrome	8	80,0	2	20,0	10	0,6	0,1
Osteonecrosis	7	77,8	2	22,2	9	0,5	0,1
Necrotizing Sialometaplasia	5	62,5	3	37,5	8	0,5	0,1
Pemphigoid	4	100,0		28,5	4	0,2	0,0

* Statistically significant differences for $p \leq 0.05$.

Table 2 : Pathology by gender (%); Table 3 : Pathology by age group (<65 yrs; ≥65 yrs) (%)



BMS - burning mouth syndrome ; OLP – oral lichen planus; BT – benign tumors; OC – odontogenic cysts; CI – candida spp infections; GT – geographic tongue; TU – traumatic ulcers; FK – frictional keratosis; SRC – salivary retention cysts; RAU – recurrent aphthae ulcers; C – oral cancer; RG – reactive granuloma; LK – leukoplakia.