

Case detection rates of impetigo by gender and age

Incidenza di impetigine in relazione al genere e all'età

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INTRODUCTION

Non-bullous impetigo of Tilbury Fox is a contagious superficial pyogenic infection of the skin caused by *S. aureus*, by streptococci or by both organisms together [1]. This study aimed to approximate, by gender and age, the lifetime prevalence distribution of this common problem in a Greek urban area population and to detect any differences in exposure since there is a scarcity of recent studies. Others have noted that the incidence of the skin and soft tissue infections has increased due to the ageing of the general population [2, 3].

METHODS

In this eight year cross sectional study (1995-2002) in an urban area outpatient setting of a general state hospital dermatologic teaching clinic the diagnosis was based on clinical and rarely on laboratory findings. The overall denominator and reference population consisted of 50,237 Greek dermatologic outpatients, aged 35 days-96 years, consecutively examined by dermatologists, males 20,909 (41.6%) and females 29,328 (58.4%) (Table 1). All cases entered in the study were only first time referrals collected in a data base. Mantel-Haenszel chi-

Table 1 - Impetigo contagiosa prevalence by gender and age.

Age (y)	Men		Women		Significance p-value, OR, (95% CIs)
	Exam	N/IC (‰)	Exam	N/IC (‰)	
0-5	1144	39 (34.1)	1040	32 (30.8)	-
6-10	1182	42 (35.5) [†]	1154	19 (16.5)	M, 0.005, 2.2 (1.2-4)
11-15	1352	17 (12.6) ^{††}	1670	15 (9.0) [§]	-
16-20	2819	9 (3.2) [†]	3821	8 (2.1) [§]	-
21-30	3184	11 (3.4)	4616	5 (1.1)	M, 0.04, 3.2 (1.03-10.5)
31-40	2287	12 (5.2)	3980	6 (1.5)	M, 0.01, 3.5 (1.2-10.4)
41-50	2148	17 (8.0)	3761	9 (2.4)	M, 0.003, 3.3 (1.4-8.1)
51-60	1975	5 (2.5)	3165	3 (0.9)	-
> 60	4818	15 (3.5)	6121	1 (0.2)	M, 0.0001, 19.1 (2.7-388)
Total	20909	167 (8.0)	29328	98 (3.3)	M, <0.00001, MHOR 2.0 (1.6-2.6)

Comparisons within the groups: men; [†]p=0.0002 OR 2.9 (1.3-5.3); ^{††}p=0.0006 OR 4 (1.7-9.6); women, p=0.03 OR 1.9 (1.03-3.5); [§]p=0.0006, OR 4.3 (1.7-11.1); exam, number of total cases examined; N/IC, number of impetigo cases; MHOR, Mantel-Haenszel weighted odds ratio.

square stratified analysis was used to compare detection rates by age and gender without confounding effects [4].

RESULTS AND DISCUSSION

In impetigo (n=265, overall relative prevalence 5.3‰) median age for men was 13 years (range 1-88) and 10 years (range, 1-61) for women, representing also the age limit for 50% of the cases. Overall, there was a significantly higher prevalence in men in conjunction with a protracted morbidity as indicated by the wider range of ages in males (Table 1).

For both sexes peak prevalence was observed in childhood, i.e., in females in the 0-5 years age group without significant difference with the respective but higher male rate, whereas in males in the group 6-10 years with a twofold significantly higher rate from females. Consistently it was not only in the adults that males predominated but also in childhood, amplifying to previously held opinion [5]. Conversely in adolescence (11-20 years), both sexes were equally affected and after the age of 15 years impetigo prevalence began to decline permanently when judged on the basis of the average rate within each group (Table 1). Thus from infancy up to 20 years along with a decreasing rate, a significant prevalence fluctuation was noted.

In adulthood (from 21 years to the end of life span) there was a stable male preponderance exceeding female rates about three times and

reaching significance in all but one the age-group strata (Table 1). Overall, lesions were located on the head and neck (65.4%), followed by 19.6% on an upper extremity and by 7.5% each on the trunk and a lower extremity.

In the context of a declining trend, yearly detection rates fluctuated significantly ($p < 0.001$) with highest rates detected in the first two years ('95 and '96). It should be noted that despite differences in climatic temperature between Athens (GR) and Birmingham (UK), we also found a significantly higher number of impetigo cases in the summer, both in males (chi-square, $p < 0.0001$) and females ($p = 0.0002$) as well as overall ($p < 0.0001$) followed by autumn, i.e., winter 7.9%, spring 18.5%, summer 41.9% and autumn 31.7% (data not shown) [6]. As reported by another study the incidence of impetigo was not found to be influenced by regional differences in temperature or farm animals [7]. The seasonal distribution is indicative of more or less common summer-related predisposing factors like humid environment, more frequent skin-to-skin contacts and/or minor traumas [6].

In Greece impetigo epidemiologic trends are characterized by young age preponderance and relatively low rates in adults (Table 1).

Keywords: impetigo, skin infection, *Staphylococcus aureus*, *Streptococcus pyogenes*.

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SUMMARY

A cross sectional study was carried out (impetigo cases n=265, relative prevalence 5.3‰, among 50,237 outpatients).

Males predominated in childhood, adulthood and overall (OR 2.0) and exhibited a more protracted

susceptibility. Impetigo was more prevalent in summer months. Lesions were located on the head and neck (65.4%), followed by 19.6% on an upper extremity and by 7.5% each on the trunk and a lower extremity.

RIASSUNTO

Gli autori hanno condotto uno studio cross-sezionale (n. casi di impetigine =265; prevalenza relativa 5,3‰ su un totale di 50.237 pazienti ambulatoriali).

Complessivamente, il maggior numero di casi (OR 2,0), sia nell'età infantile che in quella adulta, è stato registrato in soggetti di sesso maschile, che hanno

evidenziato anche una sensibilità più protratta. La prevalenza della malattia è stata maggiore nei mesi estivi. Testa e collo sono risultate le sedi più frequenti di localizzazione delle lesioni (65,4%), cui hanno fatto seguito una delle estremità superiori (19,6%), il tronco (7,5%) e un'estremità inferiore (7,5%).

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