

European Respiratory Society Annual Congress 2012

Abstract Number: 3317
Publication Number: P4756

Abstract Group: 6.1. Epidemiology

Keyword 1: Epidemiology **Keyword 2:** No keyword **Keyword 3:** No keyword

Title: Time trends (1985-2011) in asthma and rhinitis in Italian general population samples

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Body: Aim To estimate trends in the prevalence of asthma, asthma-related symptoms and risk factors such as allergic rhinitis and smoking. Methods Three surveys were carried out on general population samples living in Pisa, Italy, in 1985-88 (PI1,n=3267), 1991-93 (PI2,n=2604) and 2009-2011 (PI3,n=1619). Subjects filled in standardized questionnaires on respiratory symptoms, asthma, rhinitis and smoking habits. In PI1 and PI2 the same questionnaire was administered, whilst in PI3 the IMCA2 questionnaire, with different wording of the questions (particularly about rhinitis), was used. To compare the diseases/symptoms prevalence within the samples the same age range (18-97 yrs) was selected. Comparison of variables across studies was performed by Pearson Chi-squared test. Results Both the prevalence of asthma diagnosis and current asthma attacks show a trend to increase. Current rhinitis increased from PI1 to PI2 and doubled from PI2 to PI3. Current smoking significantly decreased among the three surveys.

STUDY	PI1	p-value (PI1-PI2)	PI2	p-value (PI2-PI3)	PI3
Asthma diagnosis	7.4%	0.439	6.9%	0.086	8.3%
Current asthma attacks	4.2%		3.5%		7.7%
Former asthma attacks	4.2%	0.307	4.6%	0.000	6.4%•
Current rhinitis	12.8%*		15.1%		33.2%
Former rhinitis	4.2%*	0.000	5.8%	0.000	4.4%
Current smoking	31.2%		24.8%		20.2 %
Former smoking	22.5%	0.000	29.7%	0.000	32.9 %

* Subjects n =3250; • Estimation Conclusions Our results highlight a trend to increased prevalence rates of

asthma, and especially rhinitis, among Italian adults. Despite the prevalence of rhinitis is consistent with recent literature (Bjerg, A. et al PLOS ONE, 2011), we underline that a different wording of the question might have determined an overestimation.