Do Work-Exacerbated Asthma And Occupational Asthma Differ?

C. Lemiere[1], L.-P. Boulet[2], L. Blais[3], H. Villeneuve[2], A. Forget[4], S. Chaboillez[4]

[1]Service de pneumologie, Hôpital du Sacré-Cœur, Université de Montréal, Montréal, Canada, [2]Institut Universitaire de Cardiologie et de Pneumologie de Québec, Quebec, QC, Canada, [3]Sacre-Coeur Hospital, University of Montreal, Montréal, QC, Canada, [4]Sacre-Coeur Hospital, Montréal, QC, Canada

Characteristics of Subjects with OA, WEA and Non-Work-Related Asthmatics

	WEA	OA	Controls	p
n	53	68	35	
Sex, M,%	56.6	66.2	45.7	0.2
Age, Y	42.5±11.5	42.0±10.4	35.5±9.9	0.005
Atopy, %	62.3	76.5	94.1	<0.001
Asthma Duration,y	6.7±10.7	4.5±8.8	18.3±23.2	<0.001
Asthma preceding exposure,%	26.4	27.2	NA	
FEV1, %pred	84.7±16.7	91.7±15.9	85.8±17.1	0.049
PC20, mg/ml	2.6±4.0	3.0±6.4	1.5±2.9	0.1
ACQ score	1.6±1.0	1.4±1.2	1.4±0.8	0.08
Outpatients visits	9.6±7.5	11.7±6.6	2.6±4.0	<0.001
Emergency visits	1.03±1.7	1.4±2.1	0.5±1.0	0.04
Hospitalization	0.09±0.3	0.2±0.5	0.03±0.2	0.2

Background: Occupational asthma and work-exacerbated asthma are often difficult to differentiate in clinical practice.
Aim: To compare the clinical, functional and inflammatory characteristics of workers with occupational asthma (OA), work-exacerbated asthma (WEA) and asthmatic subjects with non-work-related asthma as well as their health care utilization.
Methods : Prospective cohort study of all asthmatic workers referred to 2 Canadian tertiary centers between 2005 and 2008 for work-related asthma, as well as non-work-related asthmatic controls assessed for the first time in the same clinics. Subjects with work-related asthma underwent specific inhalation challenges in order to differentiate OA from WEA. Demographic characteristics, asthma control (as measured by the Asthma Control Questinnaire), functional characteristics (FEV_1, PC_{20}), airway inflammation (Sputum eosinophils, neutrophils) as well as health care utilization (outpatients visits, emergency visits and hospitalization were compared between the three groups.
Results : Sixty-six workers with OA, 54 with WEA and 35 subjects with non-work-related asthma were enrolled. Their clinical and functional characteristics are presented in Table 1. Workers with OA had a higher sputum eosinophil count (4.4%) when at work compared with those removed from work (0.9%), p<0.005. In contrast, subjects with WEA did not show any difference in sputum eosinophils between periods at and away from work. Workers with OA and WEA also had a similar health care utilization during the year preceding the diagnosis of work related asthma. In contrast, subjects with non-work related asthma required less outpatient visits and less visits to the emergency in the year prior to their first visit to our centers, in spite of a similar severity of asthma.
Conclusion. Subjects with OA and WEA have similar clinical and functional characteristics. However, work exposure was associated with eosinophilic inflammation only in subjects with OA. In spite of a similar asthma severity, work-related asthma was associated with a significant increase in health care utilization compared with non-work related asthma.

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