



ORAL PRESENTATION

Open Access

O02 - Exercise-induced bronchoconstriction in young athletes

Sven Seys*, Gudrun Marijse, Ellen Dilissen, Thierry Troosters, Jan Ceuppens, Koen Peers, Lieven Dupont, Dominique Bullens

From 3rd Pediatric Allergy and Asthma Meeting (PAAM)
Athens, Greece. 17-19 October 2013

Introduction

Exercise induced bronchoconstriction (EIB) is more prevalent in elite athletes compared to controls. It is however unclear how many young athletes suffer from EIB.

Methods

Football players (n=24), basketball players (n=15), swimmers (n=12) were recruited at the elite sport high school (12-14 years old) in Leuven (Belgium). Age-matched controls (n=7) were recruited among children performing sports at a recreational level. Eucapnic voluntary hyperventilation test was used to assess EIB according to previous standards. Subjects breathed a gas mixture (5% CO₂, 21% O₂ and 74% N₂) at a target rate of 85% of their maximal voluntary ventilation (MVV) per minute (assessed before the EVH test) for 6 minutes. Spirometry was performed at 1, 5, 10 and 15 min after the EVH challenge. EVH test was considered positive if the fall in FEV₁ ≥10%. Allergy for house dust mite, grass pollen, tree pollen, weeds, dog and moulds was assessed by skin prick test (considered positive if at least one SPT was positive).

Results

FVC (L) was significantly higher in swimmers compared to controls (p<0.05). EIB (fall in FEV₁ ≥10% at EVH test) was diagnosed in 4 out of 12 swimmers, 3 out of 20 football players, 1 out of 11 basketball players and 1 out of 7 control individuals. Only 1 of these individuals (swimmer) had pre-existing asthma. Maximal fall in FEV₁ (%) was significantly higher in swimmers (mean: -8.8%) compared to football players (mean: -6.1%), basketball players (mean: -1.0%) and controls (mean: -3.6%) (p=0.027). Allergy was equally distributed among four groups: 7 out of 24 football

players, 1 out of 7 controls, 5 out of 11 basketball players, 3 out of 11 swimmers (p=0.94).

Conclusion

Swimmers had highest prevalence of EIB. Maximal fall in FEV₁ was significantly higher in swimmers compared to other athletes and controls despite higher FVC levels. Competitive swimmers are exposed to both intense exercise and airborne trichloramine in contrast to other athletes (only intense exercise) and controls. This might explain why airway hyperreactivity is more common in swimmers compared to other athletes.

Published: 28 February 2014

doi:10.1186/2045-7022-4-S1-O2

Cite this article as: Seys et al.: O02 - Exercise-induced bronchoconstriction in young athletes. *Clinical and Translational Allergy* 2014 **4**(Suppl 1):O2.

Submit your next manuscript to BioMed Central
and take full advantage of:

- Convenient online submission
- Thorough peer review
- No space constraints or color figure charges
- Immediate publication on acceptance
- Inclusion in PubMed, CAS, Scopus and Google Scholar
- Research which is freely available for redistribution

Submit your manuscript at
www.biomedcentral.com/submit



Catholic University of Leuven, Leuven, Belgium



© 2014 Seys et al; licensee BioMed Central Ltd. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/2.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. The Creative Commons Public Domain Dedication waiver (<http://creativecommons.org/publicdomain/zero/1.0/>) applies to the data made available in this article, unless otherwise stated.