What we should learn from the London Olympics


INTRODUCTION

The London Olympics have just finished. Official reports will soon become available on how many athletes participating in the games had asthma. However, as in the past [1], prevalence data will often be deducted by the number of athletes using inhaled beta-2 agonists that, according to the new 2012 World Anti-Doping Agency (WADA) rules [2], were on this occasion permitted for all the most commonly used short-acting and long-acting drugs, just following a declaration of use made by the athletes themselves. This self-reporting will largely influence the accuracy of estimates, which will not distinguish between clinical asthma and exercise-induced bronchoconstriction (EIB) without clinical asthma, as recently requested [3]. Moreover, no information will be provided on how the diagnosis of asthma was made, on the presence of comorbid conditions such as sensitization or allergic rhinitis, as well as on whether the management of asthmatic athletes followed the international asthma guidelines, with special reference to the concomitant use...
of long-acting beta agonists and inhaled corticosteroids (at present, permitted by the WADA rules).

In two recent articles, the British Medical Journal called attention to the relevance of an optimal management of asthma in sport medicine, as well as to the need of ‘making the most of the Olympics’ by taking advantage of the educational impact that the ‘shop window’ of elite athletes may have on the general public [4,5].

Allergic Rhinitis and its Impact on Asthma (ARIA) is an international initiative that was launched after a World Health Organization meeting held in 1999. Its aim is to provide and diffuse validated guidelines for the management of allergic rhinitis and the concomitant frequent involvement of the lower airways. The original document, published in 2001 [6], translated into 42 languages and diffused in 64 countries, was first updated in 2008 [7] and then in 2010 [8**] on the basis of an improved methodology (GRADE) to guarantee evidence-based statements and support the strength of recommendations given [9]. In 2006, an ARIA document was developed to specifically address the needs of elite athletes suffering from allergic rhinitis [10]. The achievements obtained in the 10 years since the publication of the first ARIA document [11] make the above studies an internationally recognized guidance for the management of rhinitis in the general population and in athletes, as evidenced by the 1633 citations currently in the scientific literature [12].

This document aims at providing three simple statements and some practical suggestions based on the evidence and recommendations of the ARIA guidelines, which might be useful in preventing asthma and EIB not only in athletes but also in the 25% of the general population with allergic rhinitis who occasionally exercise.

STATEMENT 1: RHINITIS HAS A HIGH AND INCREASING PREVALENCE IN ATHLETES

In a review of 16 cross-sectional studies performed in 10,328 athletes, rhinitis has been reported to occur with prevalence rates of up to 41%, and with an increasing incidence over the years [13*]. The prevalence of rhinitis is higher in cold air sport disciplines: 48.6% in skiers [14]. However, high prevalence rates are also reported at Summer Olympics: 29.0% in the Australian Delegation at Sydney 2000 [15], and 25.3 and 27.0% in the Italian pre-Olympic athletes at Sydney 2000 and Beijing 2008, respectively [16]. Furthermore, the transient immunodeficiency associated with intense training has been shown to favor the occurrence of upper respiratory tract infections and infectious rhinitis in close temporal proximity of competitions [17].

Accordingly, it was expected that at least one out of four athletes participating in the London Olympics would be suffering from rhinitis.

STATEMENT 2: DIAGNOSING RHINITIS IN ATHLETES IS VERY IMPORTANT

Rhinitis is often considered a trivial disease and is largely underdiagnosed and self-managed in athletes. However, rhinitis has been shown to significantly affect the quality-of-life and performance of athletes, also in relation to the effects of drugs taken to control clinical symptoms [18].

Moreover, rhinitis represents a well known risk factor for asthma [6,10] and for EIB, a condition often occurring in athletes, even in the absence of clinical underlying asthma [3*]. Certainly, rhinitis exerts an additive negative effect on the well being and disease control of athletes with asthma [19].

Therefore, the ARIA recommendation assessment of patients with rhinitis for co-existent asthma should also be extended to athletes with rhinitis. As clinical symptoms are poorly predictive of asthma/EIB and baseline pulmonary function tests are often normal [20], an accurate clinical examination should be carried out by a trained physician on athletes suffering from rhinitis. This examination should be complemented by a specific allergy questionnaire – such as the Allergy Questionnaire for Athletes, AQUA [21] – and eventually by provocation tests [22*].

STATEMENT 3: RHINITIS SHOULD BE TREATED IN ATHLETES ACCORDING TO EVIDENCE-BASED GUIDELINES WITH SPECIAL CONSIDERATIONS FOR MODIFYING FACTORS

In addition to implementing the general ARIA recommendations for the treatment of allergic rhinitis [6,7,8**,9], special considerations for factors that modify these recommendations should be taken into account for athletes. These relate to the potential side-effects of some drugs, as well as to the limitations set by WADA in the 2012 list of prohibited substances [2*].

ARIA guidelines state that individuals with allergic rhinitis and the frequently occurring concomitant involvement of the lower airways should receive a combined treatment for the nose and the lung and lay-friendly information on the optimal management of their symptoms [6,7,8**]. This is particularly important for athletes with EIB in whom the bypass of the nose (which filters, warms and moisturizes air) increases the negative effects of the hyperventilation through the mouth, leading to
bronchial epithelial damage and clinical symptoms [3, 23].

Inhaled and nasal steroids, permitted by WADA when their concentration in urine exceeds the allowed threshold. Although there are no restrictions for the use of antihistamines, it is well known that – particularly first-generation molecules – may have potential side-effects on the cardiovascular and nervous system and are known to induce sedation and fatigue in many patients. Therefore, the use of second-generation molecules must be preferred, and the potential side-effects should be carefully monitored in athletes, in relation to the relevant cardiovascular loads and the need for unaffected reaction times for optimal performances.

Preventive measures should also be undertaken to limit exposure to environmental factors (air humidity and temperature, content in pollutants and allergens responsible for sensitization in allergic athletes) that may trigger symptoms and affect performances during training and competition.

Hopefully, these simple concepts will help athletes suffering from rhinitis in sharing the motto ‘Yes, (with allergy) we can’ [24]. Moreover, athletes may become ambassadors to broadcast this positive message to the hundreds of millions of other allergy sufferers around the globe.

Acknowledgements

None.

Conflicts of interest

The ARIA members reviewed and commented the text drafted according to the outline agreed upon during an ARIA meeting, and approved the final document. None disclosed.

REFERENCES