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- Original articles

Allergic and non-allergic rhinitis in swimmers: clinical and cytological aspects

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Abstract

Background Rhinitis, either allergic or non-allergic, is frequent in athletes, particularly in swimmers. In this latter case, exposure to chlorine in swimming pools seems to play a relevant role, since it can exacerbate a pre-existing allergic rhinitis (AR) or produce a non-specific irritation. The aim of this study was to detail the clinical and cytological characteristics of rhinitis in swimmers, and to assess the possible role of chlorine-induced symptoms.

Methods Elite swimmers with rhinitis symptoms underwent a complete diagnostic work-up, including allergy testing, nasal cytology and anterior rhinomanometry. Those evaluations were repeated after 1 month of use of a nasal clip during swimming. A matched group of asymptomatic swimmers was also studied. A total of 74 swimmers (54 symptomatic and 20 controls), with an age range of 9–21 years, were studied. In the control group, only mild and non-specific findings were observed, and only two had a positive skin test.

Results In the symptomatic group, 24 (44%) had AR, and 19 (35%) had a predominant neutrophilic inflammation. The use of a nose clip reduced cellular infiltration and nasal resistances only in the subjects with neutrophilic rhinitis, whereas a clinical improvement was seen also in AR.

Conclusion A neutrophilic rhinitis occurs in a large proportion of swimmers. This seems to be irritative in its nature and can be prevented by avoiding the direct contact with chlorinated water.