

Prevention of trauma in high level volleyball

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Abstract

Background. Even if in the literature extended research on kinetics and kinematics in different sports are described, most of the studies have been centered on baseball and only a few publications are focused on shoulder pathology in volleyball. For this reason the present research seeks to identify the existent relationships between potential limiting factors, mainly regarding traumatic issues and the impact on sport performance.

Aims. The research focuses on the determination of mechanical stress in the shoulder for the strike attack in volleyball players, aiming to establish the determinant-facilitating factors involved in overuse trauma mechanisms and in addition to elaborate and implement a prophylactic program included into the training session, finally leading to the prevention of rotator cuff tendinitis and impingement syndrome in volleyball.

Methods. The present study was carried out on a group formed of 12 women volleyball players, between August 2006 and July 2007. We used the goniometric, dynamometric and statistical methods for data standardization (Student test, Anova and the Newman-Keuls control test). By evaluating the obtained information we have elaborated a prophylactic program for the prevention of rotator cuff tendinitis and impingement syndrome. Measurements were carried out before and after application of the program.

Results. Application of the prevention program addressed rotator cuff tendinitis leading to an improvement of palm and scapular force index, the final test showing a progress of 10.73% and respectively of 10.33% comparing to initial testing and to an improvement of the amplitude of joint movement of 17% for internal rotation in the dominant limb (scapulohumeral joint).

Conclusions. Improvement of the investigated parameters shows the practical efficiency of the proposed program leading to improvement of muscular and joint imbalance.

Key words: prophylaxis, trauma risk, overuse, shoulder joint.