



The comparison of vertical impulse during cutting manoeuvre in soccer players with athletics groin pain and healthy ones

Poster Presentation

1Hamidreza Naserpour * ; 2Elham Shirzad; 3Mehdi Khaleghi; 4Amir Letafatkar

¹Department of Biomechanics and Sport Injuries, Faculty of Physical Education and Sport Science, Kharazmi University, Tehran, Iran (hamidreza.naserpour@gmail.com)

²Department of Health and Sport Medicine, Faculty of Physical Education and Sport Science, University of Tehran, Tehran, Iran

³Department of Biomechanics and Sport Injuries, Faculty of Physical Education and Sport Science, Kharazmi University, Tehran, Iran

⁴Department of Biomechanics and Sport Injuries, Faculty of Physical Education and Sport Science, Kharazmi University, Tehran, Iran

Abstract

Introduction: Impulse is one of the best indexes in ground reaction force characteristics of human movement. Impact also provides further information including the amplitude and duration of applying force (Sharifmoradi & Raji, 2017). This study aimed to compare vertical impulse during a cutting maneuver between soccer players with athletics groin pain and healthy ones.

Methods: Twenty-eight soccer players (14 healthy and 14 with AGP) taking part in the second division league participated in the current study. The vertical impulse corresponding to the peak of vertical ground reaction force was evaluated by the area allocated under the force-time diagram during cross-cutting maneuvers via force plate with a 1000 Hz sampling rate (Santoro et al., 2021). The subjects did these maneuvers 3-times at each side with a 1-minute rest in between (Shirzad Araghi et al., 2021). MATLAB and ORIGIN Pro software version 2021 were used to filter and process the force plate data. The data were processed using SPSS version 25. The Shapiro-Wilk test was used to check the normality distribution of data. An independent t-test was used to compare the results between healthy and AGP groups. The data were analyzed at a significance level of 0.05.

Results: The results showed that the groin pain group has higher vertical impulse in the dominant limb during cutting maneuver but the difference wasn't significant ($P=0.06$). Also, there were no significant differences in the vertical impulse of non-dominant limb ($P=0.88$) between groups.

Conclusion: According to the result, although the rate of vertical impulse was higher in the dominant limb of the groin pain group due to the statistical report, it can't be concluded that pain can change the vertical impulse in Ipsi-and contralateral side alone. So the outcomes of the present study should be interpreted with caution and the overall resultant should be considered with other effective factors such as fatigue or muscle activity.

Keywords

Athletic Groin Pain (AGP); Kinetic; Vertical Impulse; Soccer

Reference:

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