BODY COMPOSITION AND POSTURAL STABILITY IN GOALKEEPERS OF THE POLISH NATIONAL JUNIOR HANDBALL TEAM

JACEK WILCZYŃSKI

Jan Kochanowski University in Kielce, Faculty of Medicine and Health Sciences, Department of Posturology, Hearing and Balance Rehabilitation, Kielce, Poland

Mailing address: Jan Kochanowski University in Kielce, Faculty of Medicine and Health Sciences, Department of Posturology, Hearing and Balance Rehabilitation, 19 IX Wieków Kielc Ave., 25-317 Kielce, tel.: +48 41 3496954, fax: +48 41 3497201, e-mail: jwilczyński@onet.pl

Abstract

Introduction. The aim of the study was to assess the relationship between the body composition and postural stability of goalkeepers representing the Polish National Junior Handball Team. ***Material and methods.*** Body composition was assessed by means of bioelectrical impedance analysis. Postural stability was examined using the AccuGait AMTI force platform. ***Results***. The body composition of the subjects was correct. All of the subjects had very good postural stability. Postural sway was higher in the sagittal plane than in the frontal one. Path Length and Average COP Speed were significantly increased during the closed-eyes trial. Only Fat Mass (%) and Fat Mass (kg) were significantly directly correlated with Area Ellipse (cm^2) (OE, open eyes). Inverse correlations occurred between Fat-Free Mass (kg) and Average Load Point Y (cm) (OE) as well as Average Load Point Y (cm) (CE, closed eyes). Muscle Mass (kg) was significantly inversely correlated with Average Load Point Y (cm) (OE) and also with Average Load Point Y (cm) (CE). Body Mass Index correlated negatively only with Average Load Point Y (cm) (CE). Total Body Water (kg) was significantly inversely correlated with Average Load Point Y (cm) (OE) and also with Average Load Point Y (cm) (CE). However, Total Body Water (%) only correlated negatively with Area Ellipse (cm^2) (OE). ***Conclusions.*** Postural stability was determined by the composition and structure of the body. Single-sided sports specialisation can lead to static disorders of the body during the developmental period discussed. Therefore, systematic tests are needed to monitor the body composition and postural stability of handball goalkeepers.

Key words: body composition, postural stability, AccuGait AMTI force platform, goalkeepers of the Polish National Junior Handball Team