ADAPTATIONS TO ANAEROBIC TRAINING IN U-18 ICE HOCKEY PLAYERS

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INTRODUCTION
Ice hockey is a game that places heavy demands on anaerobic energy production and requires the ability to perform repeated intervals of high intensity exercise, as players perform in various game situations. Ice hockey is characterized by a combination of both high speed and elevated rates of force production. The purpose of the present study was to evaluate changes in anaerobic capacity, in ice hockey players of the Polish National Team (age 18 years or younger) during their 7-month preparation period for the World Championships.

METHODS
Twenty-six members of the Polish Under-18 National Team performed a 30s Wingate anaerobic power test (WAnT) on a cycle ergometer, in September (after pre-season training), in December (after the 1st part of league play-offs) and in March (prior to the preparation period for the World Championships). Peak Power (PP), Mean power (MP) total work achieved (TWA), time to peak power (TPP) and fatigue index (FI) were calculated from the WAnT. Blood lactate concentration (LA) was measured pre-testing, 4-min and 8-min post WAnT testing via the photometric method.

RESULTS
Significant increases in PP and TWA (p<0.05) were observed after the 1st competition period (September-December). Increases in PP and TWA values within this period accompanied a decline in LA. The intensification of competition period resulted in a lower effectiveness of anaerobic metabolism, accompanied by an increase in LAmx and 8710;LA with constant values of Pmax and TWA.

CONCLUSION
The decreased concentration of lactate in the blood during consecutive periods of training accompanied by stable values of Pmax and TWA indicate improved anaerobic metabolism in the ice hockey players. This study shows that the 1st league of play-offs players have an increased peak power and total work achieved and a higher blood lactate threshold, indicating that they were more effective in increasing anaerobic capacity than specific training.

Keywords: Hockey, Physiology

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