ABSTRACT

Title: Conditional abilities of Czech ice hockey players in NHL according to the anaerobic Wingate test

Aims: The aim of this thesis was to find out and evaluate the level of anaerobic readiness of selected Czech forwards and defenders playing in NHL between 2001/2002 and 2015/2016 seasons. The evaluation was based on comparison of the results in Wingate test of the research groups and specified standards of the first league (ELH) players. The other purpose was to find out whether there are differences between the results of the forwards and defenders.

Methods: There were used the research methods of quantitative analysis including effect size. Research sample consists of the group of 26 forwards (mean age = 20.5 ± 4.4) and the group of 16 defenders (mean age = 23.2 ± 4.5) who have played in NHL. Results of the main parameters, i.e. peak power output, peak power relative to 1 kg of body mass, anaerobic capacity, anaerobic capacity relative to 1 kg of body mass, of the 30 s anaerobic Wingate were used. The data were collected from database of Faculty of PE and sport, Charles University in Prague and confronted with the first league ELH standards from the longitudinal research (Heller, Vodička 2014). The comparison was based on the mean values and dispersion of performances, effect sizes were calculated as well by using Cohen’s d coefficient. Differences were interpreted as small (d = 0.20-0.49), moderate (d = 0.50-0.79) and large (d ≥0.8).

Results: Results analysis showed that the both groups of forwards and defenders overcome the standards of ELH players at all compared parameters (Pmax, Pmax.kg⁻¹, AnC, AnC.kg⁻¹). Therefore we evaluate the level of conditional abilities in NHL research group positively. The only results of anaerobic capacity relative to body mass at defenders group was found as small effect
(d = 0.36) all the others overcome ELH standards by large effect (d > 1). Within the research groups were forwards better at relative peak power and relative anaerobic capacity by small effect (d = 0.44) and moderate effect (d = 0.74). Conversely, defenders overcome forwards by moderate effect (d = 0.56) and small effect (d = 0.43) at absolute peak power and absolute anaerobic capacity.

**Key words:** Conditional abilities, peak power, anaerobic capacity, Wingate test, ice hockey, NHL