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Changes in players' perceived recovery and muscle soreness during and after a congested week in a U-19 soccer team from the Czech Republic

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INTRODUCTION:
An increase in training load with reduced recovery periods characterizes congested weeks, and it could result in residual fatigue, increasing the risk of match-play injury [1] and non-contact injury [2]. Monitoring the perceived recovery and muscle soreness during this period is essential to understand how players tolerate the stress imposed. Therefore, the study aimed to determine changes in perceived recovery and muscle soreness during and after a congested week.
METHODS:
Sixteen Czech male soccer players (age 18.3± 4.1 yr; height 183 ± 5.5 cm; weight 73.5 ± 8.1 kg) from a professional U-19 team were monitored during a 5-days training camp, pre-season. The training included technical/tactical (n=7) and strength and conditioning (n=2) sessions, as well as friendly matches (n=2). A Self-reported Likert Scale from 0 to 10 was used to assess players' perceived recovery (0= poor recovery to 10= maximum recovery) and muscle soreness (0= absence of soreness to 10= very intense soreness). Total distance (m) and sprint (m) derived from a global positioning system (GPS) was used as load indicator from technical/tactical sessions and matches. Repeated measures ANOVA was used to compare the days, with Bonferroni post-hoc to detect significant differences. Significance was set at $p<0.05$.
RESULTS:
During the 5-day, load indicators were progressively reduced (total distance, day 1= 5.444 ± 680 m and day 5 = 3.470 ± 876 m; sprint, day 1= 420 ± 154m and day 5= 72 ± 138m). Recovery was significantly impaired ($F=21.2$; $p<0.001$) after day 1 (7.73 ± 1.91) and continued during the days (day 2= 4± 0.9; day 3= 4.2± 0.9; day 4= 4.4 ± 1.3; day 5= 3.7 ±1.0 u.a) returning to normal values after one-day resting (7.7 ± 1.0). Similarly, the soreness increased significantly ($F=22.2$; $p<0.001$) after day 1 (2.2 ± 1.7) and continued during the days (day 2= 6.5 ± 1.4; day 3= 6.4± 1.3; day 4= 6.3 ± 1.0; day 5= 7.0 ±0.9 u.a) returning to normal values after one-day resting (2.4 ± 0.8).
CONCLUSION:
A congested week demonstrated impairment in players' perceived recovery and muscle soreness after day 1 and remained across 5 days. Even though the load decreased progressively, it can suggest that players presented cumulative fatigue according to the perceptual measures. However, besides the significant reduction in players' recovery and increased muscle soreness, a subsequent return to initial conditions occurred by taking one day of rest after the congested week.

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