Pengaruh Cold Water Immersion Sebagai Metode Pemulihan Terhadap Parameter Kelelahan Atlet Muda Provinsi DKI Jakarta = Effect of Cold-Water Immersion as a Recovery Method on The Fatigue Parameters of Special Capital Region of Jakartaâs Youth Athletes

Fauzan Nanggadita, author

Abstrak

Latar belakang: Partisipasi anak dalam pembinaan jangka panjang banyak dilakukan sejak usia anak. Di Indonesia seringkali dijumpai jadwal latihan muda melebihi batas jam latihan yang direkomendasikan. Tidak terpenuhinya pemulihan sesuai beban latihan dapat menyebabkan kelelahan tidak teratasi dan menjadi hambatan performa atlet muda. Tujuan: Penelitian ini bertujuan untuk mengetahui pengaruh cold water immersion sebagai salah satu metode pemulihan pada atlet usia muda. Metode: Penelitian ini menggunakan desain uji klinis dengan pembanding, acak tersamar tunggal. Penelitian dilakukan pada 32 atlet berusia 11-16 tahun yang terdaftar dalam program pembinaan provinsi DKI Jakarta. Randomisasi membagi subjek kedalam kelompok intervensi (cold water immersion selama 10 menit dengan suhu 15) dan kelompok kontrol (pemulihan pasif selama 10 menit). Subjek melakukan pemeriksaan baseline nilai standing long jump (SLJ), kadar laktat darah (LD), dan nilai rating of perceived exertion (RPE), dilanjutkan protokol simulasi latihan, serta dengan protokol pemulihan. Pengamatan nilai SLJ, LD, dan RPE dilakukan setelah pemulihan dan 24 jam pasca latihan. Dilakukan analisis rerata dalam kelompok menggunakan uji repeated ANOVA dan post hoc Bonferroni untuk nilai SLJ serta uji Friedman dan post hoc Wilcoxon untuk nilai LD dan RPE. Dilakukan analisis perbedaan rerata antar kelompok pada masing-masing data dari pengukuran 10 menit dan 24 jam pasca simulasi latihan menggunakan uji T tidak berpasangan pada nilai SLJ serta uji Mann-Whitney pada nilai LD dan RPE. Hasil: Analisis data berhasil dilakukan pada 30 subjek. Didapatkan peningkatan kembali nilai SLJ mendekati nilai baseline pada kelompok intervensi (p=0,103), sedangkan nilai SLJ pada kelompok kontrol semakin menurun pada 24 jam pasca simulasi latihan. Terjadi penurunan nilai LD hingga di bawah anaerobic threshold pada kelompok intervensi, sedangkan nilai LD kelompok kontrol masih di atas anaerobic threshold setelah 10 menit subjek melakukan protokol pemulihan masing-masing. Tidak ada perbedaan perubahan nilai RPE yang bermakna pada kedua kelompok dari waktu ke waktu. Kesimpulan: Cold water immersion dapat memulihkan performa pada atlet muda dan mengurangi tingkat kelelahan dengan lebih baik pada atlet usia muda.

.....Background: Children's participation in long-term coaching started from a young age. Young athletes' training schedules in Indonesia often exceed the recommended practice hours. Not fulfilling the recovery according to the training load can cause unresolved fatigue and become an obstacle to the performance of young athletes. Purpose: This study aims to determine the effect of cold water immersion as a recovery method for young athletes. Methods: This study used a randomized, single-blinded, controlled clinical trial design. The research was conducted on 32 athletes aged 11-16 enrolled in the DKI Jakarta provincial coaching program. Randomization divided the subjects into the intervention group (10 minutes of cold water immersion at 15) and the control group (10 minutes of passive recovery). Subjects carried out a baseline examination of standing long jump (SLJ) values, blood lactate levels (LD), and rating of perceived exertion (RPE) values, followed by an exercise simulation protocol, as well as a recovery protocol. After recovery

and 24 hours after exercise, SLJ, LD, and RPE values were reobserved. Mean analysis was performed within groups using repeated ANOVA, Bonferroni post hoc tests for SLJ values , and Friedman and Wilcoxon post hoc tests for LD and RPE values. We analyzed the mean differences between groups for each data from measurements 10 minutes and 24 hours after the exercise simulation using the unpaired T-test on SLJ values and the Mann-Whitney test on LD and RPE values. Results: Data analysis was successfully performed on 30 subjects. The SLJ value was found to increase again to close to the baseline value in the intervention group (p=0.103). In contrast, the SLJ value in the control group decreased even more 24 hours after the exercise simulation. There was a decrease in the LD value below the anaerobic threshold in the intervention group, while the LD value in the control group was still above the anaerobic threshold after 10 minutes; the subjects carried out their respective recovery protocols. There was no significant difference in changes in RPE values in the two groups over time. Conclusion: Cold water immersion can improve performance in young athletes and reduce fatigue levels better in young athletes.