Impact of ischemic intra-conditioning on bar velocity in the bench press exercise

Summary

Aim of the study: The aim of the study was to analyze the impact of the intra-conditioning method of blood flow restriction (BFR) on bar velocity during the bench press.

Methods: 15 men (age: 23±3 years, body weight: 84±11 kg, 1 repetition maximum (1RM) in the bench press: 132±23 kg) participated in 4 experimental sessions: CONT (without blood flow restriction), BFR-SHAM (20 mmHg of blood flow restriction), BFR-50 (50%AOP of blood flow restriction) and BFR-80 (80%AOP of blood flow restriction). During the experimental protocol the subjects performed 5 sets per 3 repetitions of bench press with load of 60%1RM and 5 min rest intervals between sets.

Results: The 2-way ANOVA showed statistical significant differences for the mean bar velocity between the BFR-80 and CONT condition in sets 1-5 as well as between the BFR-80 and BFR-SHAM condition in sets 1-5. In addition, the 2-way ANOVA showed statistical significant differences for peak barbell velocity between the BFR-80 and CONT condition in sets 1-5.

Conclusions: The results of the study indicate that intra-conditioning BFR increases bar velocity during the bench press exercise. However, only high cuffs pressure significantly influenced on bar velocity, which indicates that the cuffs pressure is one of the critical factor determining acute BFR effect during resistance exercises.

Keywords: occlusion, resistance training, arterial occlusion pressure, upper limbs, sport performance