

SWACSM Abstract

Differences in Arterial Occlusion Pressure of the Superficial Femoral Artery Between the Dominant and Non-Dominant Leg

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ABSTRACT

The arterial occlusion pressure (AOP) is dependent on limb circumference. Previous research seldom reports the AOP of both limbs. **PURPOSE:** The purpose of this study was to compare the superficial femoral artery AOP measured in the dominant and non-dominant legs. **METHODS:** Ultrasound (GE LOGIQ) was used to detect blood flow through the superficial femoral artery of both legs in a random order in 20 males and 20 females. Circumference of the upper thigh, leg volume, and skinfold thickness were measured in both legs. Blood pressure was continuously monitored using a CNAP device. An inflatable cuff was placed around the upper thigh. The cuff was inflated to 50 mmHg and then inflated continuously (10 mmHg/10 s) until arterial blood flow and pulse waves were no longer detectable by the ultrasound. The AOP was then measured in the opposite leg. The AOP data were analyzed with a mixed model analysis of variance while maintaining a family-wise p-value of 0.05. **RESULTS:** In males, the AOP of the dominant (209.4 ± 29.4 mmHg) and non-dominant legs (206.8 ± 32.5 mmHg) were not significantly different ($p=0.790$). Likewise, in females the AOP of the dominant (212.3 ± 58.3 mmHg) and non-dominant legs (203.5 ± 50.9 mmHg) were not significantly different ($p=0.386$). When combining the data for males and females, the AOP of the dominant (210.9 ± 45.6 mmHg) and non-dominant legs (205.2 ± 40.7 mmHg) were not significantly different ($p=0.412$). Thigh circumference was the only variable that significantly ($p=0.027$) contributed to AOP. In both males and females, there were no differences in thigh skinfold thickness, circumference, and volume between the dominant and non-dominant legs. The dominant leg was larger in 24 (60%) of the subjects; the larger leg had a higher AOP in 19 (47.5%) of the subjects; and the dominant leg had a higher AOP in 26 (65%) of the subjects. Although the AOP between the dominant and nondominant legs was not statistically significant, the largest difference in AOP between the two legs was 124 mmHg. **CONCLUSION:** There were no significant differences in AOP of the superficial femoral artery between the dominant and non-dominant legs in either males or females. Because of the potentially larger differences in the AOP between the two legs, we recommend measuring the AOP in both limbs when using blood flow restriction during exercise.