

POSTER PRESENTATION

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Effects of 7 days of arginine-alpha-ketoglutarate supplementation using NO₂ Platinum on brachial artery blood flow and the levels of plasma L-arginine, nitric oxide, and eNOS after resistance exercise

Jeremy Reid*, Garson Skelton, Mandy Clark, Anthony Boucher, Darryn S Willoughby

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Background

Arginine-alpha-ketoglutarate supplements are alleged to increase nitric oxide production, thereby resulting in vasodilation, which will increase oxygen and nutrient delivery to muscles which during resistance exercise and facilitate muscle hypertrophy. Therefore, the purpose of this study was to determine the effects of 7 days arginine-alpha-ketoglutarate supplementation using NO₂ Platinum on arterial blood flow and the levels of circulating L-arginine, nitric oxide, and eNOS after resistance exercise.

Methods

In a randomized, double-blind format 24 physically-active males, ages 18-25, underwent 7 days of supplementation with 12 caplets daily (1,200 mg) of either NO₂ Platinum (n = 12) or placebo (n = 12). Before and after the supplementation period, a resistance exercise session was performed involving 3 sets of 15 repetitions with 70%-75% of the 1-RM. Immediately prior to, immediately after, and 30 min after each exercise session brachial artery blood flow was determined and venous blood was obtained. Blood samples were used to determine the levels of plasma L-arginine, nitric oxide, and eNOS. Data was analyzed with a 3-way (group x test x time) ANOVA (p < 0.05). Plasma

L-arginine, however, was analyzed with a 2-way (group x time) ANOVA (p < 0.05).

Results

From the pre-exercise blood samples at each exercise session, L-arginine decreased 0.89% in the placebo group after supplementation, whereas the NO₂ group significantly increased 84.67% (p = 0.001). Brachial artery blood flow was significantly increased in both groups (p = 0.001) immediately post-exercise, but was not different between groups. Nitric oxide was shown to significantly increase in both groups (p = 0.001) immediately post and at 30 min post-exercise, but was not different between groups. eNOS was significantly increased in both groups (p = 0.028) immediately post and at 30 min post-exercise (p = 0.004), but was not different between groups.

Conclusion

Collectively, these results suggest that NO₂ Platinum effectively increased plasma L-arginine levels; however, the effects observed in brachial artery blood flow and serum nitric oxide and eNOS were attributed to resistance exercise rather than NO₂ Platinum.

Exercise and Biochemical Nutrition Laboratory, Department of Health, Human Performance, and Recreation, Baylor University, Waco, TX 76798, USA

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