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Consumption of Animal and Vegetable Protein on Muscle Power in Road Cyclists from 18 to 20 Years in Bogota, Colombia

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Abstract : Athletes who usually use protein supplements, are those who practice strength and power sports, whose goal is to achieve a large muscle mass. However, it has also been explored in sports or endurance activities such as cycling, and where despite requiring high power, prominent muscle development can impede good competitive performance due to the determinant of body mass for good performance of the athlete body. This research shows, the effect with protein supplements establishes a protein - muscle mass ratio, although in a lesser proportion the relationship between protein types and muscle power. Thus, we intend to explore as a first approximation, the behavior of muscle power in lower limbs after the intake of two protein supplements from different sources. The aim of the study was to describe the behavior of muscle power in lower limbs after the consumption of animal protein (AP) and vegetable protein (VP) in four route cyclists from 18 to 20 years of the Bogota cycling league. The methodological design of this study is quantitative, with a non-probabilistic sampling, based on a pre-experimental model. The jumping power was evaluated before and after the intervention by means of the squat jump test (SJ), Counter movement jump (CMJ) and Abalacov (AB). Cyclists consumed a drink with whey protein and a soy isolate after training four times a week for three months. The amount of protein in each cyclist, was calculated according to body weight (0.5 g / kg of muscle mass). The results show that subjects who consumed PV improved muscle strength and landing strength. In contrast, the power and landing force decreased for subjects who consumed PA. For the group that consumed PV, the increase was positive at 164.26 watts, 135.70 watts and 33.96 watts for the AB, SJ and CMJ jumps respectively. While for PA, the differences of the medians were negative at -32.29 watts, -82.79 watts and -143.86 watts for the AB, SJ and CMJ jumps respectively. The differences of the medians in the AB jump were positive for both the PV (121.61 Newton) and PA (454.34 Newton) cases, however, the difference was greater for PA. For the SJ jump, the difference for the PA cases was 371.52 Newton, while for the PV cases the difference was negative -448.56 Newton, so the difference was greater in the SJ jump for PA. In jump CMJ, the differences of the medians were negative for the cases of PA and PV, being -7.05 for PA and - 958.2 for PV. So the difference was greater for PA. The conclusion of this study shows that serum protein supplementation showed no improvement in muscle power in the lower limbs of the cyclists studied, which could suggest that whey protein does not have a beneficial effect on performance in terms of power, either, showed an impact on body composition. In contrast, supplementation with soy isolate showed positive effects on muscle power, body.

Keywords : animal protein (AP), muscle power, supplements, vegetable protein (VP)
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