EFFECTS OF WHITE OR RED GRAPE JUICE CONSUMPTION ON FATIGUE, MUSCLE DAMAGE, AND INFLAMMATION IN RUGBY ATHLETES: A RANDOMIZED CONTROLLED TRIAL

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Introduction

Rugby is a sport that demands strength and power. It involves high-intensity exercise, causing muscle fatigue, muscle damage, and inflammation. Grape juice is an antioxidant food, which can contribute to reducing this damage. The juices can be white or red, with the main difference being the amount of polyphenols, the first being poorer in this compound. To evaluate the effect of grape juice consumption on muscle fatigue, markers of muscle damage and inflammation in Rugby players

Materiais e Métodos

This is a randomized, blinded clinical study. Data were collected from 19 male athletes. The variables collected included the evaluation of the muscle thickness of the upper limb brachii biceps (right and left) and handgrip strength; parameters of biochemical markers for muscle damage (CK-NAC, CKMB, LDH, TGO) and dosage of the inflammatory cytokine IL-6. Por meio do SPSS, versão 22.0, aplicou-se o teste Generalized estimating equations (GEE), tendo esta análise estatística por finalidade avaliar o efeito dos fatores individualizados ou associados, com pos teste de Sidak, considerando p<0,05 como estatisticamente diferente. Estes fatores grupo (basal, suco de uva branco ou suco de uva tinto) e o momento (pré e pós) foram avaliados isoladamente ou na interação. Para a análise, foi utilizado o programa estatístico SPSS versão 21.0. p<0.05 was considered statistical difference . Ethical protoclo 2.942.589 and Brazilian Clinical Trials Registry: RBR-5mv7jd

Resultados

We found a statistically significant reduction in total creatine kinase and MB creatine kinase fraction related to muscle fatigue at the post-departure time in the white and red grape juice groups, p<0.05. There was a significant reduction in lactate dehydrogenase levels as an indicator of protection against muscle fatigue, however, only in the white grape juice group (p<0.05). Also, in this white juice group, muscle thickness increased significantly, evaluated by ultrasonography, p<0.05.

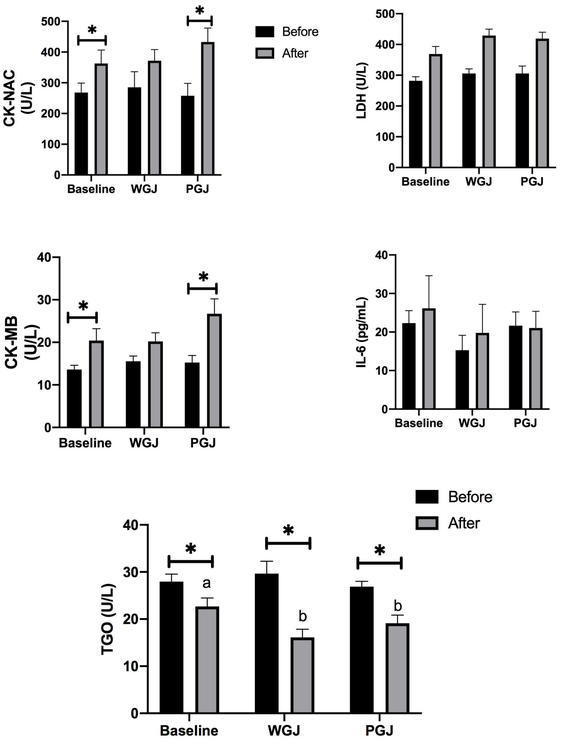
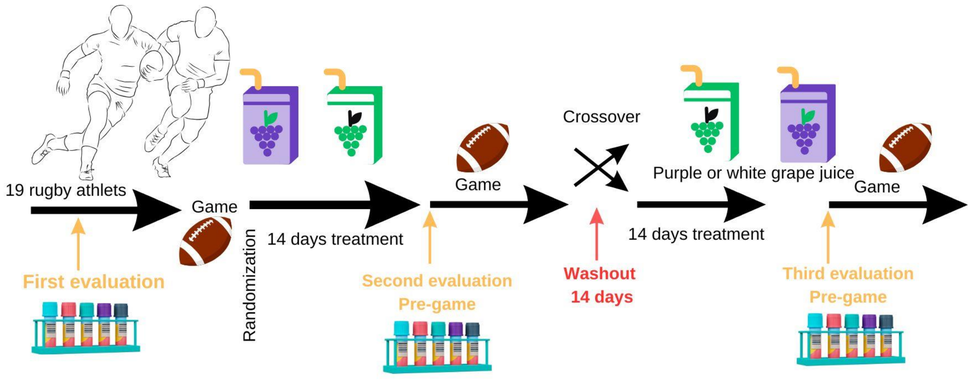


Figure 2.. Dosage of Creatine kinase-NAC, Creatine kinase-MB, Lactate dehydrogenase and IL-6 levels in rugby players evaluated before and after different types of intervention, basal (Control), white grape juice (White) or purple grape juice (Red). *p<0.05 comparing within the group in relation to before and after.



Conclusion

Different factors could explain these results, such as the thermal range present in this region, located around 1,000 m above sea level, which can reach up to 20ºc/day. Also, in the winter, time to harvest, at 2022 (0.00mm) the levels of rain were lower than 2023 (20mm). More studies are needed to observe possible intra-region variations and the behavior of different cultivars. However, the results obtained are auspicious regarding the quality of the wines in question, demonstrating a balance between the main factors involved, such as climate, soil, and relief. These characteristics will certainly be important for defining the terroir of this region, seeking its own identity, which will be constructed based on these and other analyses.

Acknowledgments

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