

Meta-Analysis of Exercise Associated Hyponatremia in Endurance Athletes

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ABSTRACT

PURPOSE: The main purpose of this meta-analytical review was to quantify the pathophysiological changes of exercise-associated hyponatremia. The other purpose was to quantify the preventive measures and treatment of exercise-associated hyponatremia in endurance athletes by reviewing the earlier findings. **METHODOLOGY:** The patho-physiology, preventive measures and treatment of exercise-associated hyponatremia were studied by meta-analysis. Published articles related to exercise-associated hyponatremia in endurance athletes were taken as the data. Data were entered into the coding sheet. Mean and standard deviation were analyzed for the variables and dependent t-test was performed for the fluid consumed and excreted and pre- and post- race weight of the athletes. **RESULTS:** The results of the meta-analysis show that serum sodium is greatly affected by the environmental temperature, time taken to complete the race, NSAID consumption and the amount of fluid consumed. There was a significant difference between pre-race and post-race body mass. The difference after a dependent samples t-test was -11.87 with a standard deviation of 15.14. From the meta-analytical review, it was found that 0.9% saline solution is the treatment rendered for exercise-associated hyponatremia. **DISCUSSION:** Patho-physiology of exercise-associated hyponatremia is usually due to excess fluid retained in the body that causes weight gain in the athlete. Preventive measures cannot be universally described. There is a significant difference between the pre-race and post-race body mass in endurance athletes with exercise-associated hyponatremia. The primary treatment preferred for exercise-associated hyponatremia is infusion of 0.9% saline hypertonic solution.