Abstract

OBJECTIVE: To establish the influence of ad libitum intake of hydrating beverages with different osmolarities on the percentage of body weight loss (%BW), the increase of heart rate (HR), and the percentage of plasma volume decrease (%PV) in athletes during a high-intensity and long-time run. METHODOLOGY: After 9 warm-up minutes on a treadmill at a speed equivalent to 50% of the heart rate reserve, the athletes performed a run at 80% of the heart rate reserve speed, followed by 90 minutes of recovery. During the 'dehydrated treatment' no fluid replacement was given, but during the 'hydrated treatments' similar volumes were ad libitum drunk of each of three hydrating beverages, namely hyperosmolar (Hiper), hypoosmolar (Hipo) and isoosmolar (Iso). RESULTS: In all treatments there were increases of the percentage of body weight loss (%BW) (p < 0.001) and of the HR (p < 0.05), and there was a correlation between the %BW and the increase of HR (p < 0.000); in the DH and Hyper treatments a decrease of the percentage of plasma volume loss (%PV) (p < 0.05) was observed. An interaction treatment-time with the %WB was observed. CONCLUSIONS: Ad libitum intake of rehydrating beverages was less than the amount recommended in the international literature. That may have been the reason why the effects of osmolarity of such beverages on the analyzed parameters could not be determined. The amount of the %BW, the HR increase and the %PV decrease were proportional to the duration of physical activity. The relationship between the %BW and the %PV was modified by the osmolarity of beverages.

Keywords

BODY WEIGHT, HEART RATE, HYDRATING BEVERAGES, OSMOLALITY, PHYSICAL ACTIVITY, PLASMA VOLUME.