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TREATMENT AND PREVENTION OF ATRIAL TACHYARRHYTHMIAS IN CRITICALLY ILL PATIENT: THE ROLE OF MAGNESIUM SULFATE

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Abstract:

In this prospective, randomized study, in the general intensive care unit at Shantee teaching hospital, we evaluated twenty patients, mean age 52±18 years and mean acute physiology and chronic health evaluation II score of 20±8, who were experiencing atrial tachyarrhythmias for more than 1 hour. After correction of their plasma potassium concentration to more than 4.0 mmol/l, patients were randomized to receive either 40 mg/kg magnesium sulfate bolus followed by 30 mg/kg/hr or 5mg/kg amiodarone bolus and 10 mg/kg/24hr infusion. Therapeutic end point was conversion to sinus rhythm over 24 hours. By logistic regression, the probability of conversion to sinus rhythm was significantly better for magnesium than for amiodarone at time 0-4 (0.6 vs.0.4), 12 (0.72 vs 0.45), and 24 (0.72vs.0.45) hours. In patients not converting to sinus rhythm, a significant decrease in ventricular response rate occurred at time zero to 0.5 hour (mean decrease 22 beats/min, P=0.0001), but there was no specific treatment effect between the magnesium and the amiodarone groups. Magnesium sulfate is superior to amiodarone in the conversion of acute atrial tachyarrhythmias, while initial slowing of ventricular response rate in non-converters appears equally efficacious with both agents.

Keywords:

Therapy . Atrial tachyarrhythmias

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