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Effect of intravenous midazolam on cardiac parameters in acute tricyclic antidepressant poisoning

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Objectives: Despite the introduction of newer and safer antidepressants, tricyclic antidepressants (TCAs) are still prescribed and used in many countries due to their cost-effectiveness. Severe morbidity and mortality associated with these drugs arises largely from their well-documented cardiovascular toxicity. Midazolam is commonly and safely used in poisoning management and intensive care for the control of agitated poisoned patients. In this study we aimed to investigate the probable effect of midazolam on cardiovascular and hemodynamic indices in TCA-poisoned patients.

Methods: 100 TCA-poisoned patients were randomly allocated to receive midazolam with a first loading dose of 0.1 mg/kg (at 2 mg/minute) followed by a 6-hour maintenance infusion of midazolam 0.1 mg/kg/h in dextrose-saline (3.33% of dextrose and 0.33% of NaCl) or placebo (dextrose-saline infusion without midazolam). Pulse rate, systolic/diastolic blood pressure, respiratory rate, neurologic status and the outcome of therapy for all patients were recorded at the time of admission and hourly for the next 6 hours.

Results: There was a statistically significant reduction in the heart rate of the midazolam treated group after the first hour of hospital admission. There were no significant differences in the respiratory rate, central nervous system manifestations and other indices between the two groups.

Conclusion: Midazolam may reduce tachycardia (and its fatal consequences) in the first hour of admission in TCA-poisoned patients.