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Effect of dexmedetomidine on postoperative junctional ectopic tachycardia after complete surgical repair of tetralogy of Fallot: A prospective randomized controlled study.

[Kadam SV¹](#), [Tailor KB](#), [Kulkarni S](#), [Mohanty SR](#), [Joshi PV](#), [Rao SG](#).

Author information

Abstract

INTRODUCTION: Incidence of junctional ectopic tachycardia (JET) after repair of tetralogy of Fallot (TOF) is 5.6-14%. Dexmedetomidine is a α -2 adrenoceptor agonist modulates the release of catecholamine, resulting in bradycardia and hypotension. These effects are being explored as a therapeutic option for the prevention of perioperative tachyarrhythmia. We undertook this study to examine possible preventive effects of dexmedetomidine on postoperative JET and its impact on the duration of ventilation time and length of Intensive Care Unit stay.

METHODS: After obtaining approval from the hospitals ethics committee and written informed consent from parents, this quasi-randomized trial was initiated. Of 94 patients, 47 patients received dexmedetomidine (dexmedetomidine group) and 47 patients did not receive the drug (control group).

RESULTS: Dexmedetomidine group had more number of complex variants like TOF with an absent pulmonary valve or pulmonary atresia ($P = 0.041$). Hematocrit on cardiopulmonary bypass (CPB), heart rate while coming off from CPB and inotrope score was significantly low in the dexmedetomidine group compared to control group. The incidence of JET was significantly low in dexmedetomidine group ($P = 0.040$) compared to control group.

CONCLUSIONS: Dexmedetomidine may have a potential benefit of preventing perioperative JET.

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