9.4.4 - Catheter Ablation of Arrhythmias

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Deep sedation with dexmedetomidine administered by electrophysiologists during COVID-19 pandemic compared with propofol administered by anesthesiologists for ablation of atrial fibrillation

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Background: COVID-19 pandemic, limiting the availability of anesthesiologists, has impacted heavily on the organization of invasive cardiac procedures such as transcatheter atrial fibrillation (AF) ablation.

Purpose: We compared the safety and efficacy of deep sedation with dexmedetomidine administered by electrophysiologists without anesthesiologist supervision, against the standard protocol performed with propofol.

Methods: We retrospectively included all AF ablation procedures performed in 2020: 23 patients sedated with 1% propofol (2 ml bolus followed by infusion starting at 1 mg/Kg/h), 26 patients with dexmedetomidine (infusion starting at 0.7 mcg/Kg/h). Both groups additionally received 1 mcg/Kg of midazolam as a single bolus and 0.05 mg single boluses of fentanyl prior to ablation on each pair of pulmonary veins (PV). Primary outcomes were oxygen desaturation (< 90%) or need for assisted ventilation/intubation, bradycardia (heart rate < 45 bpm) and persistent hypotension (systolic blood pressure < 90 mmHg).

Results: Baseline characteristics and hemodynamic variables did not differ between the two groups (all $p > 0.05$). In 8/23 (35%) patients propofol infusion velocity reduction was necessary to maintain the hemodynamic values, compared to 7/26 (27%) with dexmedetomidine.

Inter-group comparison of hemodynamic variables during the procedure showed no statistically significant difference, despite a trend in favor of dexmedetomidine (3 respiratory depressions and 3 persistent hypotension episodes with propofol vs. 0 with dexmedetomidine; $p = 0.057$).

Conclusion: Deep sedation with dexmedetomidine administered by electrophysiologists without anesthesiologist supervision is safe and effective for AF transcatheter ablation. A trend towards a lower incidence of hypotension and respiratory depression was noted when compared to propofol.