Propofol in patients with established Brugada Syndrome. Preliminary results of a randomized controlled trial

P. Flamée; C. De Asmundis¹, J. Tshering Bhutia¹, S. Vanden Eynde¹, H. Van Den Bossche¹, J. Poelaert¹

Department of Anaesthesia and Perioperative Care, UZ Brussel, Vrije Universiteit Brussel, Brussels, Belgium.

Introduction: Brugada Syndrome (BrS) is a distinct syndrome with a typical electrocardiographic pattern of coved-type ST segment elevation in the right precordial leads from V₁ to V₃ and a complete or incomplete right bundle branch block (1). Clinical symptoms may vary due to incomplete penetrance, from syncope to cardiac arrest. Evidence about the alluded proarrhythmic effect from propofol in such patients is lacking. Although a causative relation between propofol and BrS is non-existent, it is currently recommended with a class IIa level as a drug to be avoided (2).

Goal of Study: The primary goal of our study was to analyze if any ST-segment changes occurred after induction of anesthesia with propofol in patients with established BrS. Secondary goal was to register rhythm abnormalities and clinical outcome.

Methods: Data was prospectively collected from 2012 up to 2017. Eighty patients with BrS, requiring surgery under general anesthesia, were randomly assigned in two equal groups. Induction of anesthesia was performed with propofol in one group and etomidate in the control group. An ECG was acquired before and after induction of anesthesia. All ECG's consisted the standard twelve leads but also the intercostal 3rd and 4th leads which are more sensitive for diagnosing ST-segment changes in BrS. Two cardiologists blinded for the induction agent, analyzed the ECG's.

Results: None of the patients induced with propofol had significant ST-segment changes, nor did arrhythmias occur during the surgical procedure. All patients were safely discharged one or two days later. Prospective studies with continuous propofol infusion, for anesthetic or sedative purposes, are necessary to further evaluate the safety of propofol.

Conclusion: Propofol does not induce arrhythmic changes at clinically used induction doses up to 3 mg.kg⁻¹, and therefore still considered as a safe induction agent for patients with established BrS.

References:

1. Antzelevitch C, Brugada P, Borggrefe M et al. Brugada syndrome: report of the second consensus conference: endorsed by the Heart Rhythm Society and the European Heart Rhythm Association. *Circulation*. 2005;111(5):659-70.
2. Postema PG, Wolpert C, Amin AS et al. Drugs and Brugada syndrome patients: review of the literature, recommendations, and an up-to-date website (www.brugadadrugs.org). *Heart Rhythm*. 2009;6(9):1335-41.