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## Propofol versus midazolam/fentanyl for elective electrical cardioversion

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**Statement of the Problem:** Elective cardioversion (EC) is a short procedure aim to return the heart to a normal rhythm following cardiac dysrhythmias. This procedure is extremely stimulating and painful and can be distressing for the patient; therefore anesthetists are often requested to provide anesthesia. The level of sedation required for cardioversion is either deep sedation or general anesthesia. Selection of the anesthetic agent is important, because a short duration of action, early recovery without complications and hemodynamic stability are required. This is particularly important in hemodynamically unstable patients. The purpose of this study was to compare propofol and midazolam – fentanyl combination for procedural sedation during EC.

**Methodology & Theoretical Orientation:** Patients older than 18 years, American Society of Anesthesiologists I-III grades undergoing elective cardioversion were randomly divided into one of two groups. Group P (n=30) were received propofol 1 mg/kg intravenous (IV) bolus followed by 0.5 mg/kg. Group MF (n=30) were initially administered fentanyl (1.25 µg/kg IV), followed by a bolus of midazolam 3 mg IV and titrated to the sedation. Time to sedation and level of consciousness was assessed by subjective clinical signs of patients: incoherent speech, vertical nystagmus, glassy eyes, yawning and then muscular relaxation. During the procedures a change in heart rate, blood pressure, and respiratory pattern were also observed. We have recorded the time intervals needed for eyes opening (awakening time) and replay psycho-cognitive functions assessed by the patient's ability to open his/her eyes upon command and to correctly pronounce the name.

**Findings:** Mean time to sedation was faster with propofol and patients in the propofol group had shorter mean times to wakening and full consciousness, but propofol was associated with a higher incidence of apnea.

**Conclusion & Significance:** The propofol provided satisfactory hemodynamic stability, along with shorter sedation and wakening. However, the advantage of shorter sedation and wakening times associated with propofol should be weighed against the possibility of adverse events, particularly respiratory depression.

### Recent Publications

1. Gerstein N S, Young A, Schulman P M, Stecker E C and Jessel P M (2016) Sedation in the electrophysiology laboratory: a multidisciplinary review. *J Am Heart Assoc.* 13:5(6).
2. Desai P M, Kane D and Sarkar M S (2015) Cardioversion: what to choose? Etomidate or propofol. *Ann Card Anaesth* 18:306-11.
3. Chung M Y, Chea J S, Kim C J and Lee B H (2001) Effect of midazolam, fentanyl and propofol for intravenous anesthesia in patients undergoing the cardioversion. *Korean J Anesthesiol* 41(3):284.
4. Tang R B, Dong J Z, Zhao W D, Liu X P, Kang J P, Long D Y, Yu R H, Hu F L, Liu X H and Ma C S (2007) Unconscious sedation/analgesia with propofol versus conscious sedation with fentanyl/midazolam for catheter ablation of atrial fibrillation: a prospective, randomized study. *Chin Med J* 120:2036–2038.
5. Zed P J, Abu-Laban R B, Chan W W and Harrison D W (2007) Efficacy, safety and patient satisfaction of propofol for procedural sedation and analgesia in the emergency department: a prospective study. *CJEM* 9(6):421-7.

### Biography

Višnja Neseć Adam is an Anesthesiologist, Emergency Medicine Specialist and Sub-specialist in Intensive Care Medicine. She is recognized for her expertise in Emergency Medicine. She served as an Assistant Professor at J J Strossmayer School of Medicine-University of Osijek. She is also Head of the University Department of Anesthesiology, Reanimatology and Intensive Care Medicine and Center for Emergency Medicine.