Impact of Pregabalin on General Anesthesia Induction

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Introduction: Numerous studies have shown the efficacy of gabapentinoids (gabapentin and pregabalin) in reducing preoperative anxiety, postoperative pain as well as opioid consumption and their side effects.(1-3) Compared to gabapentin, pregabalin absorption is dose independent, resulting in a linear pharmacokinetic profile, advantageous for single preoperative dose usage.(4) Authors hypothesized that pregabalin premedication reduced, via its sedative effect, anesthetic requirement for general anesthesia induction.

Methods: After local ethics committee approval, a randomized, double blind, placebo-controlled trial was conducted. Fifty women, aged 18-40 years, ASA I-II, scheduled to undergo elective short laparoscopic gynaecologic procedures were enrolled after written consent. Treatment group patients were given 150mg PO of pregabalin 1 hour before surgery while control group patients received a placebo. The primary outcome is the dose of propofol required to achieve hypnosis in 50% of the patients (ED50). Hypnosis was defined based on predetermined spectral entropy values (SE < 50 and RE-SE < 10).(5) The ED50 was estimated using Dixon’s up-and-down methodology.(6) The secondary outcome is preoperative anxiety.

Results: The propofol ED50 is not statistically different between the pregabalin and placebo group (1.33 ± 0.08 vs 1.30 ± 0.06 mg/kg ; p = 0.12), as is the median ([25th-75th percentile]) preoperative anxiety level (32 [23-55] vs 30 [6-67] ; p = 0.35).

Discussion: Premedication with 150mg PO of pregabalin does not reduce propofol requirement for induction of general anesthesia in a population of young ASA I-II women. This result is in agreement with the fact that gabapentinoids principally act on presynaptic calcium channels and not on GABA receptors. It also suggests not to decrease the induction dose of propofol following premedication with pregabalin. Finally, contrary to published literature, no significant anxiolytic effect of preoperative pregabalin was found in the studied population.

References: