Author’s response to reviews

Title: The relationship between the level of μ-opioid receptor (μORs) and postoperative analgesic use in patients undergoing septoplasty: A prospective randomized controlled trial.

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Author’s response to reviews:

Dear Editor,

Thank you for your effort in assessment of our manuscript. We have revised the manuscript according to the comments of the editor. We hope that you will find the revised version suitable to reviewers.

Editor's comments:

1. English grammar and spelling need significant improvement to make it more readable.
Response: English grammar and spelling was reviewed and necessary corrections were made in the article.

2. The rationale of the study is not clear. Is there a differential effect of tramadol/fentanyl on pain depending on opioid receptor levels in peripheral blood?
Response: Opioids such as tramadol and fentanyl show their effects on pain control act by engagement of specific cell surface receptors; the opiate receptors, which are designated μ [mu], κ [kappa] and δ [delta]. Opioid analgesics target mainly the μ receptors. These receptors are found predominantly in the central nervous system, brain and spinal column, but are also present on vascular, cardiac, lung, and peripheral blood mononuclear cells. Engagement of the opiate receptors induces a series of intracellular signals, including inhibition of adenylate cyclase, decreased opening of calcium channels, increased potassium currents and activation of protein kinase C (PKC). The major effect of these pathways is reduction in cell excitability and neurotransmission.

3. Why measure μ-opioid receptor levels in peripheral blood?
Response: The levels of μ-opioid receptor may measured through μ-opioid receptor (MOR) mRNA expression in tissue samples and protein levels in peripheral blood. μ-Opioid receptor mRNA expression in tissue samples may quantified with a reverse transcription PCR assay. μ-Opioid receptors levels from venous blood samples in cover tubes were studied in the Olympus AU 600 autoanalyzer (Olympus Optical Co., Japan) using Randox kits.
4. How did you arrive at your sample size?
Response: The sample size and power analysis was calculated using a previous study named ‘’Human Mu-Opioid Receptor Gene A118G Polymorphism Predicts the Efficacy of Tramadol/Acetaminophen Combination Tablets (Ultracet) in Oxaliplatin-Induced Painful Neuropathy’’. A total of 106 patients were required for the study. Additional information is added in the material method section of the article.

5. Were clinicians/patients/research staff blinded to group allocation?
Response: The patients and research staff were blinded to group allocation.

6. What does this tell us that is new?
Response: There is limited number of studies in the literature related to the relationship between opioid agents and the mu-opioid receptors.