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M. Aly, A. Ibrahim, W. Farrag, K. Abdelsalam, H. Mohamed, A. Tawfik

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**Pruritus after intrathecal morphine for cesarean delivery: incidence, severity and its relation to serum serotonin level**

M. Aly, A. Ibrahim, W. Farrag, K. Abdelsalam, H. Mohamed, A. Tawfik  
Anaesthesia Department, Assiut University, Faculty of Medicine, Assiut, Egypt

**Corresponding author at :**

M. Aly  
Anaesthesia Department, Assiut University, Faculty of Medicine, Assiut, Egypt  
E-mail: galam1967@yahoo.com

**Abstract**

Background: Pruritus is the most common side effect of intrathecal morphine, especially in parturients. The exact mechanism is not clear and many possible mechanisms have been suggested. Among these is the activation of the 5-hydroxytryptamine subtype<sub>3</sub> receptors by the intrathecal morphine.

Methods: Forty parturients who underwent elective cesarean delivery under spinal anesthesia were divided into two groups of 20 each in this prospective, randomized study. Both groups received an intrathecal injection of 0.5% (2-3 mL) hyperbaric bupivacaine in addition to 100 µg of morphine in group 1 (M100) and 200 µg of morphine in group 2 (M200). Two blood samples were taken from each patient for serotonin estimation, preoperatively and four hours later. Postoperatively, all patients were assessed for pruritus (incidence and severity), pain (visual analog pain scale), first request for analgesia, and total analgesic dose required within 24 hours.

Results: The serum serotonin level increased significantly postoperatively, by 283% versus 556% ( $P<0.05$ ) in group M100 and M200 respectively. The incidence of pruritus was 55% in the M100 group, and 75% in the M200 group ( $P=0.32$ ). Postoperative pruritus severity was significantly higher in group M200 than in group M100 ( $P<0.05$ ) at six and eight hours; but not at other times. Postoperative analgesia, as well as analgesic consumption, was comparable between groups.

Conclusion: The serum serotonin level increased significantly in the postoperative period in both groups, suggesting a role of serotonin in the genesis of intrathecal morphine-induced pruritus.

**Keywords:** Intrathecal morphine; Cesarean delivery; Pruritus; Serum serotonin level.

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