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Extent to which preoperative intravenous dexamethasone avert postoperative pain-A correlation with C-reactive protein

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Statement of the Problem: After laparoscopic cholecystectomy somatic pain due to incisions given on the skin at the port site plus visceral pain from organs in the abdominal cavity and shoulder pain due to irritation of the diaphragm are the constant annoying factors. To reduce this pain a wide range of analgesic drugs and anti-inflammatory drugs have been introduced-glucocorticoids being one of them can decrease convalescence period if used preoperatively.

Aim: In this study we evaluated whether preoperative intravenous dexamethasone is effective enough to decrease postoperative pain of laparoscopy cholecystectomy and improve quality of recovery in postoperative period.

Methodology: The study was conducted on 50 patients randomly divided by envelope draw method into two groups of 25 each. All belonged to ASA-I and ASA-II. Patients of group A were given 2ml I/V normal saline as placebo and to patients of group B I/V dexamethasone 8 mg (2ml) was given 90 minutes before induction of anesthesia. Post-operative pain was assessed at rest and during mobilization at equal interval of time according to visual analog scale (VAS) and verbal rating scale (VRS). CRP levels and postoperative requirement of rescue analgesic were also noted.

Findings: Dexamethasone significantly reduced postoperative pain during the first 24 postoperative hours. The added total VAS and VRS score of first 24 hours post-op for overall pain at rest [placebo (VAS-108, VRS-102) and dexamethasone group (VAS-56, VRS-60)] and during mobilization [placebo (VAS-125, VRS-129) and dexamethasone group (VAS-66, VRS-66)] were significantly low in dexamethasone group and overall requirement of analgesic was also decreased in dexamethasone group than placebo group in first 6 post-operative hours (P-value=0.001). CRP levels were significantly low in dexamethasone group than placebo group (P value=0.0001).

Conclusion & Significance: Pre-operative I/V administration of 8mg dexamethasone 90 minutes prior to induction of anesthesia for laparoscopic cholecystectomy surgery provide effective postoperative analgesia and reduce need for rescue analgesics.

Recent Publications

1. Friedman G D (1993) Natural history of asymptomatic and symptomatic gallstones. *The American Journal of Surgery*. 165(4):399-404.
2. Baxendale B R, Vater M and Lavery K M (1993) Dexamethasone reduces pain and swelling following extraction of third molar teeth. *Anaesthesia*. 48(11):961-4.
3. Campbell W I and Kendrick R W (1991) Postoperative dental pain-a comparative study of anti-inflammatory and analgesic agents. *Ulster Med J*. 60(1):39-43.
4. Feroci F, Rettori M, Borrelli A, Lenzi E, Ottaviano A and Scatizzi M (2011) Dexamethasone prophylaxis before thyroidectomy to reduce postoperative nausea, pain, and vocal dysfunction: a randomized clinical controlled trial. *Head Neck*. 33(6):840-6.
5. Sapolsky R M, Romero L M and Munck A U (2000) How do glucocorticoids influence stress responses? Integrating permissive, suppressive, stimulatory, and preparative actions. *Endocr Rev*. 21(1):55-89

Biography

Manisha Bhatt Dwivedi is working as a Professor of Anesthesiology, in the Department of Anesthesiology and Critical Care MMIMSR Mullana, Ambala, India. Her areas of interest are airway management, life support programs and neuromuscular monitoring. She is regularly organizing and participating in the workshops related to these skills and is engaged in teaching and training programs as incharge simulation laboratory, central research cell.

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