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Pulmonary endarterectomy with deep hypothermic circulatory arrest: Acute pain management

Marc Giménez-Milà
Papworth Hospital, UK

Aim: To assess postoperative pain intensity and the analgesic requirements in the postoperative period, in patients undergoing sternotomy for pulmonary endarterectomy involving deep hypothermic circulatory arrest compared to valvular cardiac surgery not involving deep hypothermic circulatory arrest.

Design & Setting: Retrospective cohort study, single-hospital center study.

Participants: Patients 18 years and older undergoing sternotomy for cardiac surgery between August 2012 and August 2014 were considered for the study.

Interventions: No modification to usual clinical practice.

Measurements & Results: Intraoperative opioid and steroid administration, Intensive Care Unit pain scores and analgesic administration in the first 48 hours after the admission to the Unit were recorded. Postoperative pain was evaluated by means of a categorical verbal scale from no pain (0) to severe pain (3) as this is the routine analgesic scale used in our Intensive Care Unit. A total of 300 consecutive sternotomy patients were included: 200 undergoing pulmonary endarterectomy (PTE group) and a control group of 100 valvular cardiac surgical procedures (non-PTE group). No patient in the PTE group received morphine during surgery while all patients in non-PTE group did ($p<0.001$). Mean (standard deviation) post-operative pain intensity score at 24 hours was 0, 30 (0, 54) in PTE group and 0, 22 (0, 41) in non-PTE group ($p=0.193$). Postoperative morphine was administered in 39% patients in PTE-group and in 47% in non-PTE group 2 ($p= 0.185$).

Conclusion: The total analgesic requirements of patients undergoing sternotomy for pulmonary endarterectomy was lower compared to patients undergoing conventional valvular cardiac surgery. No differences in pain score was found at 24 hours after surgery.

marc.gimenez@nhs.net

Development and validation of analytical method for simultaneous estimation of paracetamol and thiocolchicoside by RP-HPLC in bulk and pharmaceutical dosage form

Chiragkumar M Patel
Shivam Pharmaceutical Studies and Research Centre, India

A simple, precise and accurate HPLC method has been developed and validated for assay of combined dosage form of paracetamol and thiocolchicoside in commercial pharmaceutical dosage form. Reversed-Phase High Performance Liquid Chromatographic (RP-HPLC) analysis was performed on a BDS Hypersil C18, 250 mm×4.6 mm, 5 µ (particle size) and Thermo Scientific column using potassium di-hydrogen phosphate: methanol (40:60, v/v) as eluent. The flow rate of the mobile phase was adjusted to 1.0 ml/min and the injection volume was 20 µl. Detection performed at 247 nm. The retention time of paracetamol and thiocolchicoside were found to be 3.27 and 5.50 respectively. The method was validated for linearity, precision, accuracy and robustness. Response was a linear function of drug concentration in the range with 250-750 µg/ml for paracetamol and 1-3 µg/ml for thiocolchicoside. Intra-day and inter-day precision were determined. Accuracy of paracetamol and thiocolchicoside was found between 99-100%. All analytical validation parameters were determined by following the ICH guidelines and its limit. The developed method proclaimed to be precise and robust for the estimation of paracetamol and thiocolchicoside in their combined dosage form.

chipatel459@gmail.com