44551 - EPIDURAL ANALGESIA IN TRAUMATIC RIB FRACTURES: A SYSTEMATIC REVIEW

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BACKGROUND: A consensus group has recently proposed epidural analgesia as the optimal therapy for patients with multiple traumatic rib fractures (1). However, its beneficial effects are not consistently recognized in the literature (2). The objective of this study was to do a systematic review of the evidences supporting the effectiveness of epidural analgesia in adult patients with traumatic rib fractures.

METHODS: A systematic search strategy was applied to MEDLINE and EMBASE (1966-September 2006), the Cochrane Register of Controlled Trials (September 2006) and the annual meeting websites (2000-2006) of relevant societies. All randomized controlled trials comparing epidural analgesia (local anesthetics and/or opioids) with other analgesic modalities in adult patients with traumatic rib fractures were included. No restriction was made for language or type of publication. Primary endpoints were all-cause mortality, ICU length of stay (LOS), hospital LOS and duration of mechanical ventilation. Review of citations retrieved, methodological assessment according to the Jadad scale and data extraction were performed independently by two investigators using a standardized form. Authors were contacted to obtain additional data or information on methodology of their study. Random-effects models were used to synthesize data according to the DerSimonian-Laird method. Sensitivity analyses were performed to explain potential sources of heterogeneity (treatment regimen, methodological quality).

RESULTS: Among the 619 citations retrieved, eight studies (232 patients) met eligibility criteria and were analyzed. Two studies were considered of high-methodological quality. Epidural analgesia did not significantly decrease mortality (9.1% vs. 4.2%, $p=0.50$, 1 study, $n=46$), ICU LOS (weighted mean difference [WMD] -3.7, 95% CI, -11.4, 4.0, 4 studies, $n=135$), hospital LOS (WMD -6.7, 95% CI, -19.8, 6.4, 4 studies, $n=140$) or duration of mechanical ventilation (WMD -7.5, 95% CI, -16.3, 1.2, 3 studies, $n=101$). This lack of benefit was consistently observed in pooled data of high-methodological quality studies. However, duration of mechanical ventilation was significantly shorter when only studies using thoracic epidural analgesia with local anesthetics were evaluated (WMD -4.2, 95% CI, -5.5, -2.9, 2 studies, $n=73$).

DISCUSSION: No benefit of epidural analgesia on mortality, ICU and hospital LOS was observed compared to other analgesic modalities in adult patients with traumatic rib fractures. However, there may be a benefit on the duration of mechanical ventilation. Considering the inconsistent quality of primary studies and the low power of the overall analysis, more data are required to confirm the efficacy of epidural analgesia in that population.

REFERENCES:

1. J Trauma 2005; 59: 1256-1267
2. J Trauma 2003; 54: 615-625