PROPHYLACTIC ENDOTRACHEAL INTUBATION IN CRITICALLY ILL PATIENTS WITH UPPER GASTROINTESTINAL BLEED: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Aims: To compare clinical outcomes and perform a cost analysis of prophylactic endotracheal intubation compared to no intubation in upper gastrointestinal bleeding (UGIB).

Methods: EMBASE, MEDLINE, and the Cochrane Central Register of Controlled Trials were used to identify studies through June 2017. Studies performed comparing prophylactic intubation to no intubation in UGIB in adults were included. Studies were excluded that did not report on at least one of the a priori established clinical outcomes. Two authors collected and assessed the data independently. Data on mortality, length of stay (LOS), cardiac complications and rates of pneumonia was collected. DerSimonian-Laird random effects models were used to calculate the inverse variance-based weighted, pooled treatment effect across studies.

Results: Seven studies (five manuscripts and two abstracts) were identified including a total of 5662 patients. Prophylactic intubation conferred increased mortality compared to no intubation (odds ratio [OR], 2.59; 95% CI [1.01 – 6.64], P = 0.05; I² = 94%). The hospital LOS was higher in the prophylactic intubation group (mean difference [MD], 0.96 days; 95% CI [0.26 – 1.67], P = 0.007; I² = 0). The prophylactic intubation group had significantly higher rates of pneumonia (OR, 6.58; 95% CI [4.91 – 8.81], P <0.0001; I² = 0%) and significantly higher rates of cardiac complications (OR, 2.11; 95% CI [1.04 – 4.27], P = 0.04; I² = 6%). There was a trend towards increased ICU LOS in the prophylactically intubated group, though this difference was not statistically significant. Using a previously published costing method based on length of stay, the prophylactically intubated group incurred costs of $9020 per patient (95% CI: 6962 – 10609) compared to $7510 per patient (95% CI: 6486 – 8432) in the non-intubated group.

Conclusions: Prophylactic intubation in UGIB is associated with higher rates of pneumonia, cardiac complications, hospital LOS and overall mortality. Furthermore, it shows a trend towards higher cost and longer ICU LOS. Because the studies included in this review were retrospective, further large prospective trials are needed to evaluate this topic further.

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