

In summary, there was no difference between continuous infusion and bolus of furosemide for all-cause mortality, length of hospital stay and electrolyte disturbance, but continuous infusion was superior to bolus administration with regard to diuretic effect and reduction in brain natriuretic peptide” Ng and Yap (2017).

Summary:

Loop diuretics remain a fundamental pharmacological therapy to remove excess fluid and improve symptom control in acute decompensated heart failure. Several recent randomised controlled trials have examined the clinical benefit of continuous vs. bolus furosemide in acute decompensated heart failure, but have reported conflicting findings. The aim of this review was to compare the effects of continuous and bolus furosemide with regard to mortality, length of hospital stay and its efficacy profile in acute decompensated heart failure.

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All parallel-arm randomised controlled trials from MEDLINE, EMBASE, PubMed and the Cochrane Database of Systematic Reviews from inception until May 2017 were included. Cross-over randomised controlled trials, observational studies, case reports, case series and non-systematic reviews that involved children were excluded. Eight trials (n = 669) were eligible for inclusion. There was no difference between furosemide continuous infusion and bolus administration for all-cause mortality (four studies; n = 491; I² = 0%; OR 1.65; 95%CI 0.93-2.91; p = 0.08) or duration of hospitalisation (six studies; n = 576; I² = 71%; mean difference 0.27; 95%CI -1.35 to 1.89 days; p = 0.74). Continuous infusion of intravenous furosemide was associated with increased weight reduction (five studies; n = 516; I² = 0%; mean difference 0.70; 95%CI 0.12-1.28 kg; p = 0.02); increased total urine output in 24 h (four studies; n = 390; I² = 33%; mean difference 461.5; 95%CI 133.7-789.4 ml; p < 0.01);

and reduced brain natriuretic peptide (two studies; $n = 390$; $I^2 = 0\%$; mean difference 399.5; 95%CI 152.7-646.3 ng.l⁻¹; $p < 0.01$), compared with the bolus group. There was no difference in the incidence of raised creatinine and hypokalaemia between the two groups. In summary, there was no difference between continuous infusion and bolus of furosemide for all-cause mortality, length of hospital stay and electrolyte disturbance, but continuous infusion was superior to bolus administration with regard to diuretic effect and reduction in brain natriuretic peptide.

Reference:

Ng, K.T. and Yap, J.L.L. (2017) Continuous infusion vs. intermittent bolus injection of furosemide in acute decompensated heart failure: systematic review and meta-analysis of randomised controlled trials. *Anaesthesia*. September 22nd. .

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