We evaluated ethanol lock therapy as treatment and secondary prophylaxis for CLABSI in children with cancer or haematological disorders” Wolf et al (2018).

Abstract:

BACKGROUND: Central line-associated bloodstream infections (CLABSIs) affect about 25% of children with cancer, and treatment failure is common. Adjunctive ethanol lock therapy might prevent treatment failure but high-quality evidence is scarce. We evaluated ethanol lock therapy as treatment and secondary prophylaxis for CLABSI in children with cancer or haematological disorders.

METHODS: This randomised, double-blind, placebo-controlled superiority trial, with two interim futility and efficacy analyses (done when the first 46 and 92 evaluable participants completed study requirements), was done at two paediatric hospitals in the USA and Australia. Patients aged 6 months to 24 years, inclusive, with cancer or a haematological disorder and new CLABSI were eligible. Participants were randomly assigned (1:1) to receive either ethanol lock therapy (70% ethanol) or placebo (heparinised saline) for 2-4 h per lumen daily for 5 days (treatment phase), then for up to 3 non-consecutive days per week for 24 weeks (prophylaxis phase). The primary composite outcome was treatment failure, consisting of attributable catheter removal or death, new or persistent (>72 h) infection, or additional lock therapy during the treatment phase, and recurrent CLABSI during the prophylaxis phase. This trial is registered with ClinicalTrials.gov, number NCT01472965.

FINDINGS: 94 evaluable participants were enrolled between Dec 14, 2011, and Sept 12, 2016, of whom 48 received ethanol lock therapy and 46 received placebo. The study met futility criteria at the second interim analysis. Treatment failure was similar with ethanol lock therapy (21 [44%] of 48) and placebo (20 [43%] of 46; relative risk [RR] 1·0, 95% CI 0·6-1·6; p=0·98). Some adverse events, including infusion reactions and catheter occlusion, were more frequent in the ethanol lock therapy group than in the placebo group. Catheter occlusion requiring thrombolytic therapy was more common with ethanol lock therapy (28 [58%] of 48) than with placebo (15 [33%] of 46; RR 1·8, 95% CI 1·1-2·9; p=0·012). Discontinuation of lock therapy because of adverse effects or patient request occurred in a
similar proportion of participants in the ethanol lock therapy (nine [19%] of 48) and placebo groups (ten [22%] of 46; p=0.72).

**INTERPRETATION:** Ethanol lock therapy did not prevent CLABSI treatment failure and it increased catheter occlusion. Routine ethanol lock therapy for treatment or secondary prophylaxis is not recommended in this population.

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**Reference:**