

Preliminary findings of an investigation into the efficacy of heparinised saline solution versus normal saline solution for maintaining patency of peripheral intravenous catheters in dogs

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OBJECTIVES

To establish the efficacy of heparinised versus normal saline solution in maintaining intravenous catheter patency in dogs.

METHODS

Prospective randomised double blinded clinical investigation. Twelve client owned dogs hospitalised for radiotherapy requiring an intravenous catheter for at least 24 hours had a 20g catheter placed in their cephalic vein. Flush solution was either 2 IU ml⁻¹ heparin in 0.9% saline (Group HS) or 0.9% saline only (Group S) and patients requiring subsequent catheters were reassigned to the alternative solution with each successive placement. Upon removal a questionnaire was completed to capture duration of placement and reasons for removal or loss. Data were tested for normality and analysed with Mann Whitney U and Fisher's Exact tests; $p < 0.05$ was considered significant.

RESULTS

Thirty-five catheters (17 Group HS, 18 Group S) were placed in 12 dogs; median placement duration was 91.6 (30.4–105.6) hours. Catheter loss overall was 18% (Group HS) and 28% (Group S). Loss due to thrombus formation was 5.9% (Group HS) and 5.5% (Group S). No significant differences for catheter duration ($p=0.82$), reason for loss ($p=0.60$) or thrombus formation ($p=0.96$) were found. Using this information, to demonstrate non-inferiority of saline only flush in relation to catheter loss from thrombus formation, a sample size of 2924 ($\alpha=0.025$, $\beta=0.8$, $\delta=-0.02$) would be required.

STATEMENT

Preliminary findings suggest no significant difference between treatment groups. Use of saline alone may remove risks associated with heparin saline, without increasing the risk of thrombus formation.