

The use of low-molecular weight heparin at a concentration of 50IU/mL was more effective in restoring the permeability of neonatal PICCs occluded in vitro by a clot, and the use of this concentration is within the safety margin indicated by scientific literature” Balamnut et al (2015).

Reference:

Balamnut, T., Venturini, D., Silva, V.C., Rossetto, E.G. and Zani, A.V. (2015) Heparin for clearing of peripherally inserted central venous catheter for newborn: an in vitro study. Revista Paulista de Pediatria. June 7th. .

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Abstract:

OBJECTIVE: To compare the efficacy of two concentrations of heparin to clear the lumen of in vitro clotted neonatal, peripherally inserted central catheters (PICCs).

METHODS: This is an in vitro, experimental quantitative study of 76 neonatal 2.0 Fr PICCs coagulated in vitro. The catheters were divided into two groups of 38 PICCs each. In both groups an infusion of low molecular weight heparin was administered with a dose of 25IU/mL for Group 1 and 50IU/mL for Group 2. The negative pressure technique was applied to the catheters of both groups at 5, 15 and 30minutes and at 4hours to test their permeability. Kaplan-Meier survival analysis was used to verify the outcome of the groups according to time intervals.

RESULTS: The comparison between both groups in the first five minutes showed that more catheters from Group 2 were cleared compared to Group 1 (57.9 vs. 21.1%, respectively). Kaplan-Meier survival analysis showed that less time was needed to clear catheters treated with 50IU/mL of heparin ($p<0.001$).

CONCLUSIONS: The use of low-molecular weight heparin at a concentration of 50IU/mL was more effective in restoring the permeability of neonatal PICCs occluded in vitro by a clot, and the use of this concentration is within the safety margin indicated by scientific literature.



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