The CATheter infections in CHildren (CATCH) trial reported reduced risks of bloodstream infection with antibiotic impregnated compared with heparin-bonded or standard central venous catheters (CVC) in paediatric intensive care” Wu et al (2019).

Abstract:

PURPOSE: The CATheter infections in CHildren (CATCH) trial reported reduced risks of bloodstream infection with antibiotic impregnated compared with heparin-bonded or standard central venous catheters (CVC) in paediatric intensive care. CVC impregnation did not increase the risk of thrombosis which was recorded in 24% of participants. This post-hoc analysis determines the effect of CVC impregnation on the risk of thrombosis leading to CVC removal or swollen limb.

METHODS: We analysed patients in the CATCH trial, blind to CVC allocation, to define clinically relevant thrombosis based on the clinical sign most frequently recorded in patients where the CVC was removed because of concerns regarding thrombosis. In post-hoc, three-way comparisons of antibiotic, heparin and standard CVCs, we determined the effect of CVC type on time to clinically relevant thrombosis, using Cox proportional hazards regression.

RESULTS: Of 1409 participants with a successful CVC insertion, the sign most frequently resulting in CVC removal was swollen limb (37.6%; 41/109), with lower rates of removal of CVC following 2 episodes of difficulty withdrawing blood or of flushing to unblock the CVC. In
intention to treat analyses (n = 1485), clinically relevant thrombosis, defined by 1 or more record of swollen limb or CVC removal due to concerns about thrombosis, was recorded in 11.9% (58/486) of antibiotic CVCs, 12.1% (60/497) of heparin CVCs, and 10.2% (51/502) of standard CVCs. We found no differences in time to clinically relevant thrombosis according to type of CVC.

CONCLUSIONS: We found no evidence for an increased risk of clinically relevant thrombosis in antibiotic impregnated compared to heparin-bonded or standard CVCs in children receiving intensive care.

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