Antimicrobial-impregnated central venous catheters for preventing neonatal bloodstream infection: the PREVAIL RCT

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Plain English summary

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Babies who are born too early or who are very sick require intensive care after birth and during early life. Most will have a long, narrow, plastic tube, called a catheter, inserted into a vein. The catheter is used to give babies fluids containing medicines and nutrition to keep them well and help them grow.

The catheter can remain in place for several days or weeks. But the presence of plastic tubing in the vein increases the risk of infection. This study aimed to find out whether or not catheters coated with antimicrobial medicines, called rifampicin and miconazole, could reduce the risk of infection. These medicines act by stopping germs from growing on the catheter, but do not harm the baby or interfere with other treatments.

A randomised controlled trial was carried out in 18 neonatal units in England. Whenever a baby needed a catheter, their parents were asked for consent to participate in the trial. The baby was then randomised, similar to tossing a coin, to receive either the antimicrobial catheter or a standard one. A total of 861 babies participated. We followed up all babies in the same way until after the catheter was removed to compare how often babies in each group had an infection.

It was found that antimicrobial catheters were no better or worse at preventing infection than standard catheters. Antimicrobial catheters cost more and we found no evidence of benefit; these results suggest that their use in neonatal intensive care is not justified. It was calculated that further research on ways to reduce infection may be good value for money, depending on the costs of this research. The babies who took part in this study were typical of babies in England receiving catheters, meaning that the results can be applied across the NHS. Future research should focus on catheters that contain other types of antimicrobials and alternative ways of preventing infection.
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This report

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