

Vasculorama

Honey to prevent catheter-associated infections

Honey has been used since ancient times to promote wound healing and reduce inflammation. It was used in Australia in an attempt to reduce the frequency of catheter-associated infections by applying it to the catheter exit site after each hemodialysis. When compared with mupirocin in a randomized controlled trial, it was about as effective and did not cause antibiotic resistance. The mechanism of its action is not entirely clear, but may include such factors as hyperosmolality, hydrogen peroxide generation, or the specific action of flavonoids or phenolic acids. Of note, it appears that not all honeys are equally effective, some being 100 times more active against bacteria than others (J Am Soc Nephrol 16: 1456).

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Cefotaximes lock to avoid ototoxicity

The use of gentamicin locked hemodialysis catheters lowers the rate of catheter-related bloodstream infections, but carries a risk of ototoxicity regardless of how low a dose is used. Hence the interest in using cefotaxime as an alternative. In a recent prospective case-controlled study, cefotaxime 10 mg/mL was as effective as gentamicin in reducing the infection rate. Its use may minimize the odds of developing aminoglycoside-associated ototoxicity (Kidney Int G7: 2505).

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Heparin leaks into the circulation from catheter lock

A Canadian study has found that filling the catheter ports with a heparin solution to prevent catheter thrombosis after dialysis results in a significant amount of heparin leaking into the systemic circulation. The leak begins immediately after setting up the catheter lock and continues for some 30 minutes. Of the 5000 units of heparin diluted to fill the

two catheter ports, an estimated 1700 to 3400 units may enter the patient's circulation (Nephrol Dial Transplant 20: 1238).

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High homocysteine levels favor fistula thrombosis

A study in Italy suggests that elevated homocysteine levels in dialysis patients increase the risk of fistula thrombosis. Patients in the third homocysteine level tertile had a relative risk of thrombosis 1.72 times greater than those in the first quartile. It is not known whether decreasing plasma homocysteine levels would prevent fistula failures (Am J Kidney Dis 45: 702).

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Managing right atrial thrombus

Right atrial thrombus as a complication of temporary hemodialysis catheter use has been reported in at least 22 cases. Mortality has been 33% in the presence of infection and 14% without infection. Small thrombi (<2 cm) may be given a trial of anticoagulation for six months, followed by repeat echo and catheter removal. In the presence of infection the catheter should be removed first, followed by anticoagulation. Thrombectomy should be considered for thrombi larger than 2 cm (Nephrol Dial Transplant 20: 474).

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Venous mapping improves fistula outcome

An organized approach consisting of counseling, venous mapping, and the application of modern surgical and salvage procedures made it possible to change patients from hemodialysis catheters to fistulas in over 80% of cases. Early failure occurred in 30-53% of fistulas, but many of these fistulas were salvaged by angioplasty or accessory vein obliteration (Kidney Int 67: 2399).

Converting temporary to cuffed catheters

We learn from a New York group that conversion of temporary to cuffed hemodialysis catheters can be safely done with a peel-away sheath using the existing venous entry site. In a group of 44 patients undergoing such conversion, the patency rate was 72% at 30 days and complications consisted largely of infection. Bleeding, air embolism, and hematoma formation were not observed (Clin Nephrol 63: 209).

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Good outcome for fistulae in the aged

A retrospective analysis of fistulas created between 1995-2005 showed an almost identical fistula survival in hemodialysis patients under and over 65 years of age. One-year survival rates were 75% in >65 groups and 79% in <65 group. At five years survival was 64% in the >65 group and 71% in <65 group. The over 65 group, however, had a higher relative risk (1.7) of the fistula failing to mature (Kidney Int 67: 2462).

When should one cannulate a new fistula

There seems to be general agreement that cannulation of arteriovenous fistulas less than two weeks old should be avoided, and that ideally one should wait at least one month. Between two and four weeks cannulation may be attempted if the fistula is deemed mature after a careful evaluation by an experienced person (Nephrol Dial Transplant 20: 684).

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