

# ISN Trial-List

May 2018



Once a month, the ISN-ACT (Advancing Clinical Trials) team collects and publishes a list of important nephrology trials from the latest medical literature. Each trial is reviewed in context and their risk of bias in seven key areas assessed.

## Key to risk of bias assessment

- |    |                                    |                             |
|----|------------------------------------|-----------------------------|
| R  | Random sequence generation         | High risk                   |
| A  | Allocation concealment             | Uncertain risk / not stated |
| BP | Blinding of participants/personnel | Low risk                    |
| BO | Blinding of outcome assessment     |                             |
| CD | Complete outcome data              |                             |
| CR | Complete outcome reporting         |                             |
| B  | No other sources of bias           |                             |

*ISN Academy: [Hypertension](#)*

## Hypertension gets a short-back-and-sides in community-based treatment program

**A Cluster-Randomized Trial of Blood-Pressure Reduction in Black Barbershops**

[Victor, et al. \*N Eng J Med.\* 2018;378:1291-1301](#)

The worldwide burden of hypertension continues to grow and strategies to ensure that evidence-based treatment is provided to disadvantaged populations are urgently needed. In a novel approach to this problem, Victor, et al. enrolled 319 African-American males with hypertension from 52 African-American owned barbershops in Los Angeles, USA. All barbers were trained to provide their clients with lifestyle advice and encouragement to see their doctor. Barbershops were then cluster-randomized to an intervention – in which barbers facilitated meetings at their shop where a pharmacist was able to prescribe and direct hypertension management (in collaboration with patients' doctors) – or to control (barber training only). At 6 months, the mean difference in systolic blood pressure reduction was 21.6mmHg (95% CI 14.7-28.4;  $P<0.001$ ) in favour of the intervention and 63.6% of the intervention group achieved target blood pressure (<130/80mmHg) versus 11.7% in the control arm ( $P<0.001$ ). Follow up was 95% complete in both arms. While admitting that the short duration of follow up and volunteer bias inherent in enrolling participants to this type of intervention may place limits on generalisability, this trial serves as another potent reminder of the potential value of taking primary care out of the clinic and into the community.



*ISN Academy: [Transplant](#)*

## Automated reminders help maintain medication adherence in young transplant recipients

**A Randomized Trial of a Multicomponent Intervention to Promote Medication Adherence: The Teen Adherence in Kidney Transplant Effectiveness of Intervention Trial (TAKE-IT)**

[Foster, et al. \*Am J Kidney Dis.\* 2018; doi: 10.1053/j.ajkd.2017.12.012](#)

Poor medication adherence is an important cause of graft failure, especially in younger recipients. Foster, et al., enrolled 169 participants aged 11-24 years from two countries who were at least 3 months post-transplant. They randomized them to either a control group which received medication adherence monitoring and 3-monthly coaching or to an intervention group in which participants also received a personalised suite of regular text messages or reminder emails to take their anti-rejection medications. Each participant received an electronic pillbox that stored all their medications and permitted monitoring of dose timing and adherence. Over a 12-month period, those in the intervention group took all of their medications for the day 78% of the time versus 68% of the time in the control group (OR 1.66, 95% confidence interval 1.15-2.39;  $P=0.006$ ). This effect did not seem to wane with time. Self-reported adherence was over 95% in both groups. There were no significant differences in tacrolimus trough levels or episodes of acute rejection. This interesting study reveals the extent of medication non-adherence in young transplant recipients, but fortunately suggests that structured reminders can make a difference.



## Regular urokinase may be preferable to heparin as an addition to taurolidine-citrate locking solutions

Safety and efficacy of taurolidine/urokinase versus taurolidine/heparin as a tunnelled catheter lock solution in hemodialysis patients: a prospective, randomized, controlled study

[Al-Ali, et al. \*Nephrol Dial Transplant\*. 2018;33:619-626](#)

Last month in the *Trial-list* we presented Winnicki, et al.'s trial demonstrating reduced catheter-related infection and dysfunction with a regimen of twice weekly taurolidine-citrate-heparin and once weekly taurolidine-citrate-urokinase (versus 4% citrate alone). Now we report a trial by Al-Ali, et al. who randomized 177 catheters (in 164 participants) to taurolidine-4% citrate-urokinase or taurolidine-4% citrate-heparin after each dialysis session and followed outcomes to 6 months. They observed 7 catheter-exchanges in the heparin group (4 for infection and 3 for thrombosis) and 1 (for infection) in the urokinase group (P=0.028). This study hints that use of urokinase with each dialysis session is superior, however given the small number of events, absence of blinding of treating physicians and the lack of data on blood culture positivity it remains an open question as to whether the additional cost of regular urokinase is justified.



## ClearGuard catheter caps pip Tego-Curos combination in cluster-randomized trial to prevent catheter infection

Cluster-Randomized Trial of Devices to Prevent Catheter-Related Bloodstream Infection

[Brunelli, et al. \*J Am Soc Nephrol\*. 2018;29\(4\) :1336-1343](#)

Prevention of catheter-related infections is a high priority and, as we have seen recently in the *Trial-list*, multiple preventative approaches are currently available. These include a variety of antimicrobial or protective catheter caps - and it is not clear if one is superior to another. Brunelli, et al. performed a cluster-randomized comparative effectiveness trial of two different types of catheter caps – a chlorhexidine coated cap (ClearGuard) and the combination of a valve (Tego) and alcohol coated cap (Curos). They enrolled 40 dialysis units and randomized them to 13 months of ClearGuard or Tego+Curos for 13 months. Ninety-eight positive blood cultures were recorded in the 1671 participants comprising the primary analysis with a rate of 0.28 versus 0.75 per 1000 catheter-days for ClearGuard and Tego+Curos, respectively (P=0.001). This significant difference in favour of ClearGuard remained when restricted to confirmed catheter-associated infections (incidence rate ratio 0.37 [95%CI 0.19-0.72]; P=0.003). While participants in each arm seemed well balanced, it was not clear what other local infection protocols were in use, leaving a potential source of bias unclear. Nevertheless, this data may help healthcare providers formulate an overall package of catheter-infection prevention strategies.



## Low insertion point and fixation reduces PD catheter migration

Peritoneal catheter fixation combined with straight upward tunnel and low implant position to prevent catheter malfunction

[Zhang, et al. \*Nephrology\*. 2018;23:247-252](#)

Peritoneal dialysis catheter malfunction may lessen the uptake of this cost-effective form of dialysis. Various approaches to reducing catheter migration have been tried, including internal catheter fixation – however this has previously only been performed laparoscopically under general anaesthetic. Zhang, et al. randomized 152 patients from their unit undergoing placement of a straight tenckhoff catheter 1:1:1 to usual surgical placement (peritoneal entry approx. 11cm above pubic symphysis with a curved tract leading to a downward exit site), modified surgical placement (lower peritoneal entry approx. 7cm above pubic symphysis and a shortened catheter with a straight upward subcutaneous tunnel to the outer cuff before a further curved subcutaneous tunnel to create a downward exit site) and modified surgical placement with catheter fixation (as described, plus intraperitoneal fixation to the peritoneum and anterior abdominal tissue with a single suture approximately 3cm below the inner cuff). Supine low volume PD was started after two days in all groups. After 6 months follow up, 0/54 participants experienced catheter malfunction in the fixation group, significantly lower than in the open surgical group (8/49, P=0.002), although not significantly different to the modified surgical group without fixation (2/49; P=0.134). Nine of the ten catheter

complications were related to catheter migration. There were no significant differences in episodes of peritonitis, leakage, inflow-outflow pain or other complications. The authors believe that the advantage of the modified technique is that the lower peritoneal entry and shorter catheter reduces the risk of omental wrapping and migration, and that the fixation suture reduces this risk still further. All procedures were performed under local anaesthetic by the same pair of nephrologists. While limited to a single centre, this study highlights the potential value of simple, but creative, approaches to common clinical problems. We hope this experience can be replicated in other settings.

