

# ISN Trial-List

July 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](#)

## Smartphone app improves self-reported medication adherence but does not lead to lower blood pressure

Association of a Smartphone Application With Medication Adherence and Blood Pressure Control: The MedISAFE-BP Randomized Clinical Trial

[Morawski, et al. JAMA Intern Med. 2018;178\(6\):802-09](#)

Recent estimates have suggested that achieving the 2017 ACC/AHA hypertension guideline target blood pressure could prevent over 300,000 deaths annually in the USA alone. Medication adherence is a prime cause of failure to reach target blood pressure and there is great interest in the potential of smartphone reminders and prompts to improve adherence. Morawski, et al. randomized 411 adults with uncontrolled hypertension on  $\leq 3$  medications to the Medisafe app (which provided reminders, adherence reports and the opportunity for peer support) or usual care. After 12 weeks, self-reported medication adherence was greater in the treatment group, but both groups reported equivalent decreases in systolic blood pressure of  $10.6 \pm 16.0$  mmHg and  $10.1 \pm 15.4$  mmHg (between group difference  $-0.5$  mmHg [95%CI  $-3.7, 2.7$ ;  $P=0.78$ ]). One novel aspect of this trial was that it was conducted without patient visits. All interactions with participants were conducted remotely and blood pressure measurements were obtained remotely via machines mailed to participants and linked wirelessly to their smartphone. Overall, the results of this trial emphasise that regimented patient self-monitoring (as required for study participation) may be more important than the use of any particular app, at least in this self-selected population. Further research in this field should be encouraged.



ISN Academy: [Dialysis](#)

## Family consultation does not reduce readmission rates in small single-centre study of hospitalized patients with ESKD

Family Consultation to Reduce Early Hospital Readmissions among Patients with End Stage Kidney Disease: A Randomized Controlled Trial

[Jasinsky, et al. Clin J Am Soc Nephrol. 2018;13\(6\):850-57](#)

Hospital admissions remain a major burden on patients with end-stage kidney disease (ESKD). Prevention of admissions has the potential to benefit patients and reduce healthcare costs. Jasinsky, et al. recruited 120 hospitalized patients with ESKD (94% on hemodialysis) at a single centre and randomized them to a family consultation (aimed at identifying cognitive, health literacy and social support factors that could be addressed to improve adherence to treatment and minimise readmission risk) or usual care. The risk of readmission to hospital at 30-days was numerically lower in the consultation group (12/60 vs 19/60) but this was not statistically significant (odds ratio 0.54 [95%CI 0.23, 1.24;  $P=0.15$ ]). This study had few inclusion and exclusion criteria and did not target patients with ESKD at high-risk of readmission. Moreover, despite recruiting beyond their target sample size, the wide confidence intervals around the odds ratio suggest that the study was underpowered. While a disappointing result, this study should not necessarily discourage further research in this important area.



**Renal denervation lowers blood pressure when antihypertensive agent regimens are held constant**

**Effect of renal denervation on blood pressure in the presence of antihypertensive drugs: 6-month efficacy and safety results from the SPYRAL HTN-ON MED proof-of-concept randomised trial**

[Kandzari, et al. Lancet. 2018;391\(10137\):2346-55](#)

Early enthusiasm for renal denervation as a treatment for hypertension has been tempered by the disappointing results of SYMPPLICITY HTN-3 – in which sham denervation was equivalent to active treatment in patients with resistant hypertension. Evidence that denervation can work absent the potential confounding effects of pharmacotherapy was provided by the recent SPYRAL HTN-OFF MED trial (*Trial list, December 2017*) and the same research group now presents the results of the SPYRAL HTN-ON MED trial. They randomized 80 participants with uncontrolled hypertension on  $\leq 3$  antihypertensive agents to denervation (including renal artery branches) or sham procedure. Participants were required to continue their baseline antihypertensive regimen throughout the 6 months of follow up. Ambulatory and office systolic and diastolic blood pressure was significantly lower at both 3 and 6 months in the denervation group (24 hour ambulatory blood pressure at 6 months:  $-7.0$  [95%CI  $-12.0, -2.1$ ] mmHg;  $P=0.0059$ ). No complications were reported. Like the previous study, this result suggests that renal denervation does reduce blood pressure – provided antihypertensive therapy is not altered. Ultimately, long-term trials with clinical endpoints, and in which appropriate variation in therapy is permitted, are required.

**Pilot study shows endovascular ultrasound is a feasible means of renal denervation**

**Endovascular ultrasound renal denervation to treat hypertension (RADIANCE-HTN SOLO): a multicentre, international, single-blind, randomised, sham-controlled trial**

[Azizi, et al. Lancet. 2018;391\(10137\):2335-45](#)

Previous trials of renal denervation have used radiofrequency ablation to effect denervation. Endovascular ultrasound is an alternative modality and Azizi, et al. present the results of a randomized, sham-controlled trial in participants with uncontrolled hypertension, not on antihypertensive agents. In 146 randomized participants, the between-group difference in ambulatory systolic blood pressure at 2 months was  $-6.3$  mmHg (95%CI  $-9.4, -3.1$ ;  $P=0.0001$ ). There were no major adverse effects, although one participant in the treatment group received a renal artery stent 6 months after their denervation procedure. Overall, this study provides preliminary evidence for the efficacy and safety of this alternative means of denervation and may pave the way for further studies.

**Could magnesium supplementation be a simple antidote to the metabolic syndrome?**

**Oral Magnesium Supplementation and Metabolic Syndrome: A Randomized Double-Blind Placebo-Controlled Clinical Trial**

[Rodríguez-Morán, et al. Adv Chronic Kidney Dis. 2018;25\(3\):261-266](#)

Magnesium supplementation has been associated with improved metabolic profile in previous randomized trials. Rodríguez-Morán, et al. tested the effects of magnesium supplementation on multiple aspects of the metabolic syndrome simultaneously. They randomized 198 participants with hypomagnesemia and 3 or more elements of the metabolic syndrome (obesity, impaired fasting glucose, hypertension or dyslipidaemia) to a solution containing 382mg magnesium or placebo daily for 16 weeks. Participants were not on antihypertensive or lipid lowering agents. At the end of the study, there were significant between group changes in systolic and diastolic blood pressure ( $-3.6 \pm 3.3$  mmHg;  $P=0.001$  and  $-5.5 \pm 1.7$  mmHg;  $P=0.005$ , respectively) and fasting glucose ( $-12.4 \pm 3.6$  mg/dL,  $P<0.005$ ) and triglycerides ( $-61.2 \pm 24$  mg/dL,  $P=0.003$ ). There were no significant differences in body mass index, waist circumference or HDL cholesterol. Collectively, the number of participants meeting study criteria for the metabolic syndrome at the end of the study was significantly lower in the magnesium group (48/100 vs 76/98;  $P=0.01$ ). This result suggests magnesium could have a surprisingly large effect on cardiovascular risk. While promising, the authors rightly conclude that larger studies replicating and extending these findings are required.

