

# 40<sup>th</sup> EDTNA/ERCA Conference Review™

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10 – 13 September 2011, Ljubljana, Slovenia

## In this review:

- Buttonhole cannulation: technique of choice?
- Renal nurses' attitudes towards older people
- Laughter yoga improves dialysis
- Polyhexanide prevents exit site infections
- Topical hyperbaric oxygen for non-healing ulcers
- Combining a central venous access with home dialysis
- Cognitive changes in geriatric patients on dialysis
- Communicating fluid restriction advice in HD sessions
- New bandage reduces post-puncture bleeding time
- Fatal blood loss with catheter disconnection

**Welcome** to this review of the 40<sup>th</sup> European Dialysis and Transplant Nurses Association/European Renal Care Association International Conference, a locally focussed summary of some of the most up-to-date technology and exciting research in renal care.

This year's Conference marked a special anniversary and focussed on celebrating 40 years of bringing together nursing, science, engineering and education in the EDTNA/ERCA to improve patient care. The Conference theme 'Health Improvement and Quality Care' emphasised the value of the continuing education and progress achieved in the last 40 years, leading to the best multidisciplinary clinical practice and professional development of all renal care workers. This Review has been created to allow those unable to attend, but with a keen professional interest in renal care, to access a summary of significant clinical studies presented that are likely to affect current practice. Selection and review of the research has been carried out independently by Associate Professor Paul Bennett, a nephrology nurse researcher at the Deakin University-Southern Health (Melbourne) Nursing Research Centre. He attended the EDTNA/ERCA 40<sup>th</sup> International Conference from 10 to 13 September 2011, held in the Congress Centre of Ljubljana Cankarjev Dom, Ljubljana.

I hope you find the conference review stimulating and I look forward to your feedback.

Kind Regards,

**Dr Janette Tenne**

Medical Research Advisor

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## Arteriovenous cannulation and arteriovenous fistula survival: the results of a randomised controlled trial

**Presenter:** Jennie King (UK)

**Summary:** In this investigation into cannulation techniques, 140 patients undergoing maintenance haemodialysis were randomised to receive buttonhole (BH) (constant site) cannulation of their arteriovenous fistulae (AVF) or normal (different site) practice for 12 months. At 12 months, BH cannulation was associated with significantly greater AVF survival (RR failure 0.139;  $p=0.027$ ) and significantly higher primary patency rates compared with those in the normal practice group (74% vs 49%;  $p=0.018$ ). Compared with normal cannulation practice, BH was associated with significantly fewer interventions (25 fistuloplasties vs 11;  $p=0.001$ ) and new aneurysm formation (8 vs 1;  $p=0.03$ ). No bacteraemias occurred in the BH group versus 2 in the normal practice group (0.09/1000 AVF days); 2 (culture-negative) exit site infections occurred in the BH group (0.12/1000 AVF days) versus none in normal practice. Bleeding times and rates of lignocaine use did not differ significantly between the groups.

**Comment:** This trial was one of the first to attempt to compare buttonhole (BH) and normal practice cannulation in a controlled study with the primary outcome of access survival. The study showed improved access survival rates for the BH arm, with improved secondary measures of decreased bleeding and decreased infection rates. Caution is required with these results, as the study controlled the quality of the intervention BH access process, but did not control the quality of normal cannulation practice.

*S22. Optimising vascular access management. 0 40.*

## EDTNA/ERCA Conference Review

**Independent commentary by** Associate Professor Paul Bennett, a nephrology nurse researcher at the Deakin University-Southern Health (Melbourne) Nursing Research Centre. He is the Editor in Chief of the Renal Society of Australasia Journal, Chair of the Kidney Health Australia Nursing Grants Committee, member of the Medical & Scientific Advisory Committee of Kidney Health Australia and Unit Chair of the Leadership in the Nursing Unit at Deakin University School of Nursing and Midwifery. His research interests include increasing exercise rates for people on dialysis, nutritional screening in dialysis and educational technologies.



## Preliminary results of the survey on attitudes of renal nurses towards older people

**Presenter:** Alessandro Zampieron (Italy)

**Summary:** Attitudes of renal nurses towards older people were explored in this worldwide survey of dialysis, nephrology and transplant nurses, all of whom belonged to the Renal Nurses Association. Their attitudes were assessed by the Kogan's Attitude Towards Old People Scale (KOP). Of the 1,061 completed questionnaires received from nurses in 12 countries, 81% of the respondents were female and the average age was 42.69 years. KOP scores indicated slightly positive attitudes towards older people (mean score 151.50). Attitudes were influenced by continent, country, religion, presence of older people in the family and level of nursing education ( $p < 0.0001$ ); in multiple linear regression analysis, continent and having elderly people in the family were identified as variables that influenced attitudes.

**Comment:** The largest global study to date exploring renal nurses' attitudes towards older people using Kogan's validated scale. Although the survey sample was dominated by Italian nurses' responses, there were significant differences in attitudes between nations. Only preliminary analysis was presented and further analysis including cultural aspects of different nations will provide useful information for clinicians, educators and researchers.

### S13. EDTNA/ERCA Projects with National Associations.

## Live and let laugh: laughter yoga during haemodialysis treatment

**Presenter:** Riki Dahan (Israel)

**Summary:** This presentation describes the benefits of laughter yoga among 40 patients attending an Israeli haemodialysis (HD) unit, which conducted a series of 5 laughter workshops, each consisting of 8 meetings. After completing the programme, all patients reported a greater awareness of the topic and an improvement in their well-being. In addition, 87% reported an improvement in the ability to enjoy laughter, 66% reported feeling less tired, 79% reported pain relief, 95% reported an improvement in communication between other patients and staff, and all patients recommended that other patients participate in this programme. The patients practice laughter yoga on a monthly basis and the unit celebrates "World Laughter Day" every year.

**Comment:** The first reported use of laughter yoga in a dialysis setting demonstrated a novel approach to improving the well-being of people undergoing haemodialysis. Although participants reported improvements in subjective measured parameters such as fatigue, pain and communication, objective parameters (validated pain scale, fatigue scores, QoL scores) were not undertaken. This therapy has tremendous potential to improve the quality of the dialysis experience.

### S08. Patient and Carer Involvement. 0 17.

## Polyhexanide reduces infection of the exit site of peritoneal catheter; randomised clinical trial

**Presenter:** Miguel Nunez Moral (Spain)

**Summary:** 58 patients undergoing peritoneal dialysis were randomised to one of two treatment strategies intended to prevent exit site infections of the peritoneal catheter: Group A ("traditional" care with saline solution and povidone-iodine; or Group B (polyhexanide solution). Data were evaluable from 44 patients who completed a 12-month follow-up period. Six underwent transplantation, 5 died and 3 were transferred to haemodialysis. Treatment was well tolerated, with no recorded side effects. Throughout the study period, significantly fewer patients in the polyhexanide group compared with those given traditional care developed exit site infections (11% vs 40%;  $p = 0.032$ ); the total number of infections was 4 in the polyhexanide group and 16 in the povidone-iodine group ( $p = 0.037$ ). The bacteria colonising the exit site were identified as *Staphylococcus aureus* (11 cases), *Corynebacterium jeikeium* (2) and *C. striatum* (1), *Pseudomonas aeruginosa* (1) and *S. lugdunensis* (1) in the povidone-iodine group, compared with only 4 cases of *P. aeruginosa* in the polyhexanide group. Notably, infections took significantly longer to materialise in the polyhexanide group.

**Comment:** In many countries, low uptake of peritoneal dialysis has been related to membrane failure and exit site infection. This well-designed RCT compared the effect of polyhexanide with povidone-iodine with the primary outcome of exit site infection (ESI). The study reported a statistically significant decrease in ESIs for the polyhexanide group. The study is important, as it adds to our understanding of potential strategies to prevent ESIs and improve peritoneal dialysis prevalence.

### S04. PD Treatment Initiatives. 0 14.

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Treatment of anaemia requiring transfusion, defined as a haemoglobin level of less than 100 g/L, where intrinsic renal disease, as assessed by a nephrologist, is the primary cause of the anaemia.

## Treatment of non healing amputation stump ulcers with topical hyperbaric oxygen during haemodialysis sessions

**Presenter:** Ronen Segev (Israel)

**Summary:** Details are presented of two patients with severe peripheral vascular disease and non-healing ulcers given topical hyperbaric oxygen (THO) throughout each of their regular haemodialysis (HD) sessions (4–5 hours per treatment). THO was supplied via a polyethylene bag (100 × 60 cm) placed around the ulcer; the bag's proximal end was closed with an elastic bandage. Patient 1, a 72-year-old man with generalised vasculopathy and obstructive pulmonary disease, received THO for 4 months for a non-healing below-knee stump. Concomitant therapy consisted of intradialytic parenteral nutrition (IDPN). After 4 months, the initially necrotic ulcer (Grade 4) had improved significantly in appearance and was reclassified as Grade 1–2. No reamputation was necessary and narcotic dosage was successfully reduced. The patient lived for a further 9 months after THO was discontinued. Patient 2 was a 77-year-old diabetic with ischaemic dilated cardiomyopathy, who received THO plus IDPN on an ulcerated below-knee stump for 3 months. After 3 months' THO therapy, healthy granulation tissue covered the stump and the ulcer was classified as Grade 1. No reamputation was necessary and the patient lived for another 2 months after cessation of THO.

**Comment:** Although Segev reported initial success in only 2 case presentations, topical hyperbaric oxygen therapy using a small polythene bag during haemodialysis sessions appears to have potential for the treatment of arterial and venous ulcers. Given the high rate of diabetes and diabetic ulcers in people on dialysis, this may be a novel and successful approach to treat debilitating ulcers and non-healing wounds.

**S19. Short Oral Presentations. P085/O 32.**

## Self management of haemodialysis Central Venous Catheter. The importance of listening to the patient

**Presenter:** Anna Marti Monros (Spain)

**Summary:** This paper describes the protocol developed by a hospital-based haemodialysis unit that successfully enables central venous catheter (CVC) self-management in home haemodialysis (HHD) patients. Using one patient as a case example, the hospital unit trained the patient over 12 consecutive HD sessions on how to manage all aspects of connection and disconnection, according to a strict hygienic handling protocol. A number of suggestions and amendments to the protocol that were proposed by the patient (e.g. attaching a mirror to the back of the dialysis monitor screen, changing the gauze size) were accepted by the nursing team and implemented in the protocol. One year later, the patient remains on HHD; the protocol has not been altered and the patient has not presented with any CVC-related infection or any other complication.

**Comment:** The prevalence of a central venous catheter for haemodialysis may prevent patients from starting or continuing dialysis at home. Many units may not consider these patients for HHD. This presentation provided some strategies to help clinicians and patients combine a central venous access with home dialysis, confirming that these patients are not contraindicated for returning to HHD.

**S29. Quality Patient Self-Care. O 51.**

## Cognitive changes in geriatric patients during and after haemodialysis

**Presenter:** Mothana Haj Yahya (Israel)

**Summary:** The impacts of dialysis upon cognitive function are described in a cohort of 38 patients aged >65 years undergoing long-term haemodialysis (HD). Cognitive assessments were conducted prior to a HD session, within 2–3 hours of commencing it, and after ending the session. All patients were assessed by the Short Test of Mental Status (STMS), while 22 patients were also subjected to the Trail Making Test Part A (TMT-A). Significant improvements from baseline in cognitive status were recorded in STMS and TMT-A scores at the end of the session; similar significant improvements occurred between within-treatment and end-of-treatment scores. A significant positive correlation ( $p=0.014$ ) between STMS and TMT-A data confirmed the relevance of these findings and previous published data. Notably, 20% of the patients had more severe cognitive changes at the end of the dialysis session. Positive correlations were observed between cognitive changes and lower blood urea levels ( $p=0.05$ ) and lower blood pressure ( $p<0.02$ ) at the end of the session; changes were more pronounced among older patients ( $p<0.009$ ).

**Comment:** This study assessed people over 65 years of age on dialysis using the Short Test of Mental State assessment tool. 38 participants were tested at 3 points: before, in between 2–3 hours into dialysis and following the dialysis session. Although some patients recorded lower cognitive scores, the surprising finding was that there was a statistically significant improvement in the cognitive status towards the end of the dialysis session. Although an obvious finding and only an association, the authors postulated the association between intradialytic blood urea levels and cognitive status.

**S30. Short Oral Presentations. O 54/P 093.**

## Monitoring and blunting coping styles in fluid restriction consultation

**Presenter:** Magnus Lindberg (Sweden)

**Summary:** Data were analysed from 51 patients (mean age 62.9 years) who had been undergoing haemodialysis (HD) treatment for a mean 3.9 years, in this investigation into cognitive coping styles (monitoring and blunting) regarding fluid restriction consultations within the HD unit. The patients reported they had been advised by the renal care team to reduce fluid intake within 6 months prior to the data collection. Cognitive coping style was assessed by the Threatening Medical Situation Inventory (TMSI). Fluid restriction advice was delivered by a bedside consultation during HD treatment; most commonly by the renal nurse, more rarely by the dietician and never by the physician. The majority of patients stated that the information was delivered as a lecture, in a forcible style. TMSI assessments defined blunting cognitive coping styles in 18 patients, monitoring styles in 5 patients and neutral in 28. Fluid intake behaviour differed significantly between these groups ( $p=0.027$ ). A Tukey's HSD post hoc test comparison between the groups identified the difference as being between patients with a TMSI-defined blunting style and those with a neutral coping style ( $p=0.028$ ).

**Comment:** The greatest challenge for many people on dialysis is being able to restrict their fluid intake. Very few interventions have shown success in this area. What we do know is that successful interventions require successful communication in combination with patient education. However, this does not always lead to behaviour change and fluid adherence. This study reports an important finding; identifying patients with blunting coping styles. Identifying these communication styles can assist clinicians in developing successful education strategies rather than a confrontational approach, which is all too often seen in Australian dialysis units.

**Poster Session A. P 005.**

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## Post-puncture bleeding time of arterio-venous fistulae is shortened by the use of a new bandage

**Presenter:** Mokhtar Chawki (France)

**Summary:** Post-puncture bleeding times of arteriovenous fistulae (AVF) puncture sites were compared between those treated with conventional manual compression and those covered with a transparent micro-perforated adhesive IRIS bandage. The 3-week study involved 64 patients dialysed 3 times weekly on native AVF (one patient had a prosthetic graft). Haemostasis values were obtained by manual compression with folded gauze in weeks 1 and 3; the IRIS bandage was applied during week 2. For arterial puncture sites, rates of persistent bleeding at 3 minutes were 53% in week 1 and 56% in week 3 with conventional manual compression compared with 18% for the IRIS method in week 2; corresponding values for venous puncture sites were 44% and 45% versus 23%, respectively. Bleeding rates with conventional compression did not differ significantly between weeks 1 and 3. IRIS and conventional compression bleeding rates differed significantly at both arterial and venous puncture sites at weeks 1 and 3 ( $p < 0.05$ ).

**Comment:** An impressive study showing statistically and clinically significant decreased post-puncture bleeding times using a new micro-perforated adhesive bandage compared with the use of conventional gauze. The primary outcome measure was bleeding at 3 minutes, with the two methods measured on the same patients. This study did not address cost analysis between the two methods. This study was from a French unit and the micro-perforated adhesive bandages may not be available yet in Australia.

**Poster Session G. P 102.**

## Major blood loss to the environment: Catheter disconnection

**Presenter:** Hans-Dietrich Polaschegg (Austria)

**Summary:** This paper describes three cases of catheter disconnection.

**Comment:** Experienced dialysis engineer Hans Polaschegg presented the results of the investigations of three coroners' cases that involved catheter disconnection. Two cases resulted in patient death and one resulted in a critical deterioration of the patient. On investigation of the machine data logs the conclusion of the cases were: 1. A patient muted the alarm; 2. The use of disconnection tubing may have contributed to disconnection and blood loss and; 3. One machine allowed a lower venous pressure that failed to detect a disconnected catheter. The presentation demonstrated the importance of the dialysis operator's assessment of the patient, with all three examples failing to detect catheter disconnection.

**S22. Optimising vascular access management. 0 44.**

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