

NIVAS second annual conference 2011: PICC and mix

Welcoming delegates to the second annual National Infusion and Vascular Access Society (NIVAS) conference, chair, Lisa Dougherty, commented on the international and multidisciplinary nature of the faculty for this 2-day event. She hoped those present would be enthused and stimulated by the renowned contributors from the UK and the USA, and that the sharing of knowledge across different disciplines would be of real benefit to all—not least patients. She also urged delegates to take the opportunity to visit the stands in the exhibition hall and let exhibitors know what new devices they would like to see.

What's new in vascular-access devices and technology?

Gail Sansivero, a Nurse Practitioner from Albany Medical College, New York, USA, told a packed auditorium that various studies of peripherally-inserted central catheters (PICCs) estimate PICC-malposition rates of approximately 10%. Possible consequences include increased risk of thrombosis and stenosis, device malfunction and even cardiac arrhythmias. The current practice of tip verification by X-ray is beset by problems, not least of which are radiation exposure and the fact that verification is post PICC insertion. Fluoroscopy allows manipulation of devices during PICC insertion, but also involves radiation exposure.

One recent solution is electrocardiograph (ECG)-guided placement using the catheter as an endovascular electrode to measure variations in P-wave height. Although results have shown near 100% success rates, ECG tip verification does require clinician education.

Another problem area is catheter securement, which Dr Sansivero said, has traditionally relied on sutures, adhesive add-on devices and prayer—the efficacy of the latter being unknown. A catheter securement device is being developed that has an integral locking mechanism, which can be deployed in under 10 seconds and remain *in situ* for up to 125 days.

Although Gail welcomed these new developments, she urged delegates to be innovative and creative, and to seek new ways of delivering improved patient care.

Old age—a venous access challenge

By contrast, the presentation by Janice Gabriel, Nurse Director, Central South Coast Cancer Network, focused on a more neglected area of vascular access—the treatment of elderly patients. She detailed the four phases of vessel

aging, including loss of connective tissue around the vein and reduced nitric oxide production leading to veins that are more rigid and fragile. Elderly patients are likely to have veins that are harder to access, bruise easily and are more prone to deep damage. Janice emphasised the importance of proper assessment and documenting of the patient and the therapy involved. Device selection should be based on using the smallest gauge, for the shortest time possible.

Sonoguided central venous access

Jack Le Donne took the rostrum to the accompaniment of rock music to deliver a hugely entertaining presentation on ultrasound-guided central venous access. Amid the razzamatazz, however, there were some important messages. He repeatedly emphasised the importance of tip verification when attempting to place a central venous catheter, and backed up his assertions with some compelling evidence. Using still photographs and videos of ultrasound imaging, he demonstrated that assumptions about vein position, size and patency could not safely be made. Many delegates were surprised to learn that veins are constantly contracting and dilating—and in some cases swing from side to side. Following a lively question and answer session, few attendees can have remained unconvinced of the need to avoid unguided central venous access procedures, which Jack referred to as 'blind sticking'.

NCEPOD findings on parenteral nutrition

Chemotherapy Lead and Nurse Practitioner, Central South Coast Cancer Network, Claire Marsh, followed Dr Le Donne with a sobering overview of the findings of the National Confidential Enquiry into Patient Outcome and Death (NCEPOD) report, *Parenteral nutrition: a mixed bag*. Key findings of the NCEPOD report included evidence of poor clinical practice and deficiencies in catheter placement, with avoidable complications arising in 54% of adults.

Catheter-related infection

Continuing the theme of avoidable complications, Thomas Nifong of Metamark Genetics Inc, observed that during his 45-minute presentation, approximately 256 patients worldwide will acquire a catheter-related infection, from which four will die. The single most important infection-prevention strategy is to institute a culture of best practice—possibly with an optimal-practice champion. Tracking and reporting of outcomes, and empowerment of team members to halt a procedure if there is a breach in sterile procedure, are key.



Vesicant extravasation: prevention, detection and management

The first day of the conference ended on a stimulating note with a presentation on extravasation by Lisa Schulmeister, Oncology Nursing Consultant, Louisiana, USA. Patient risk factors include tattoos, oedema, small or older veins and subcutaneous fat. Device-related risk factors include catheter misplacement/migration, catheter damage during insertion, occlusion of the catheter tip and catheter damage *in situ*. It is vital to monitor constantly for signs of extravasation—early detection and prompt action are key to reducing tissue damage. Although there are several extravasation antidotes and treatments, few have been properly documented. Dexrazoxane is an exception in that in two clinical trials it has been shown to reduce necrosis, and thereby remove the need for surgery in up to 98% of patients.

Developments in prevention of infection

Following an excellent first day of the conference, day two began in much the same vein. Tom Elliott, Consultant Microbiologist, University Hospital, Birmingham, delivered an insightful presentation on prevention of catheter-related infection. Large numbers of organisms reside on the skin surface, and vascular access inevitably involves pushing these organisms through the skin layers into the blood vessel, with the associated risk of infection. This risk is reduced by proper skin cleansing with the correct antiseptic agent. Iodine and alcohol have both been shown to have poor efficacy in destroying residual skin microorganisms following cleaning, whereas chlorhexidine gluconate (CHG) has a long duration antiseptic effect. Tom asked delegates for a show of hands and was pleased to see that very few of those present were still using iodine or alcohol for skin cleansing. He urged delegates to take advantage of developments in technology, but also to insist on best practice on every occasion.

Marcia Wise, Clinical Marketing Manager for BD Medical, continued the infection prevention theme as she presented an overview of needleless connectors, which have been identified as a source of infection. Care must be taken to ensure that they are compatible with other equipment to prevent leakage, and that proper cleaning of all devices is carried out.

CHG has now been incorporated into the gel matrix of an antiseptic pad that has been shown to significantly reduce infection rates. In a presentation on the transparent CHG gel pad dressing, Maurice Madeo of 3m Healthcare, outlined a number of advantages, including allowing visual inspection

of the access site, rapid and durable antimicrobial action, and good adhesion even in the presence of fluids around the device-insertion site.

Heparin: to flush or not to flush?

Karen Bravery, Advanced Nurse Practitioner, Haematology, Great Ormond Street Hospital, London, delivered an initial report on the controversial practice of heparin flushing of central venous access devices. Heparin flushes are used to prevent thrombus formation and prolong catheter patency, but the efficacy of this practice is unproven. Practice varies and there is a risk of administering the wrong concentration of heparin, which has led to death in neonates. To address these concerns, a NIVAS-backed survey has been undertaken which is still in the early stages, but will be reported at a later date.

Poster presentations

The afternoon session was taken up with poster presentations, all of which were described by chair Janice Gabriel as excellent. The winners of the best abstract poster were Jennifer Caguioa and Chris Greensitt, with their poster titled *Can PICC line surveillance make a difference?* The audience then voted for the best presentation and the overall winner was Lisa Dougherty, with her poster titled *Using the flush-out technique for managing extravasation*.

Closing remarks

Janice Gabriel drew proceedings to a close by thanking everyone involved and expressing her delight at the positive feedback she had received. The enthusiasm with which the entire conference programme had been received was testament to how informative and worthwhile the presentations had been. The friendly and collaborative nature of the event, both in presentation sessions and throughout the exhibition hall, made her feel more like she was at Friends Reunited than a conference—all of which bode well for the 2012 meeting, which is now in planning.

Slides from presentations are available in the Members section of the NIVAS website.

www.nivas.org.uk

DATE FOR YOUR DIARY:

The 3rd Annual NIVAS Conference will be taking place over 21 - 22 May 2012 at The Hotel Russell in London.