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New research means difficult veins no longer a painful problem

Nurses at Liverpool and Campbelltown Hospitals have developed a new cannula insertion method set to make life easier for patients with veins that are difficult to access.

The research team, led by Liverpool Hospital Clinical Nurse Consultant and Western Sydney University Senior Lecturer, Dr Evan Alexandrou, developed a protocol that uses ultrasound to guide the insertion of catheters for these patients.

“One of the main things patients complain about when they come to hospital is how many times they are being pricked with needles,” he said.

“More than half of all the patients admitted to hospital will need an intravenous catheter – it is the most common invasive clinical procedure performed in hospitals worldwide.

“But more than a third of adult patients and half of child patients have veins that are difficult to access.

“Sometimes it might take up to 10 or 20 attempts to gain access to a vein in some patients, which is a very painful experience and ultimately increases the risk of the catheter failing or an infection developing.”

Over half of the catheters fail in patients with difficult veins within 24 hours, triggering the reinsertion of another catheter making vascular access a very traumatic experience for many patients.

Dr Alexandrou said the method developed at Liverpool Hospital saw nearly all ultrasound-guided insertion attempts succeed the first time with patients also reporting significantly less pain during the procedure compared to traditional insertion techniques.

Patients who may have veins that are difficult to access include people who have received chemotherapy, who are obese or malnourished, with chronic and complex disease or who have a history of intravenous drug use.

“Under the protocol we developed, if a clinician is unable to insert the catheter after two attempts the patient can be referred to the team and we use ultrasound to guide the catheter into a viable vein,” he said.

“We have also developed an insertion algorithm to tailor the type of catheter based on the depth of the blood vessel from the skin and the diameter of the vein. We also take into account how long the patient may need intravenous therapy and the type of medication to be infused – all these factors impact on the longevity of the device.”

“Our ultrasound insertion method has achieved nearly a 100 per cent success rate with the service also available for patients after hours.

“There are a lot of hospitals that want to emulate what we do here.”

Dr Alexandrou’s team, which includes Campbelltown Hospital Clinical Nurse Consultant Vanno Sou and Liverpool Hospital Clinical Nurse Consultants Craig McManus, Nicholas Mifflin, Steven Frost and Julie Ale, had the results of their research published in BMC Nursing.