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Bridging the Gap in Vascular Access

Announcer:
Welcome to *Vascular Viewpoints* on ReachMD, sponsored by Becton Dickinson. Here's your host, Dr. Jennifer Caudle.

Dr. Caudle:
This is *Vascular Viewpoints* on ReachMD. I'm your host, Dr. Jennifer Caudle and joining me to discuss how we can bridge vascular access gaps beyond emergency settings is Dr. Fulvio Pinelli, Director of the Vascular Access Center at the Careggi University Hospital in Florence, Italy. Dr. Pinelli, welcome to the program.

Dr. Pinelli:
Thank you. Thank you, everyone. Pleased to be here.

Dr. Caudle:
To start us off, Dr. Pinelli, can you tell us what kinds of factors go into choices of infusion devices within emergency care situations?

Dr. Pinelli:
Well, the type of vascular access is based on patient's needs. The choice as to take into account several aspects. First of all, the type of infusions, for example, based on drug pH and osmolarity, we define the peripheral rules compatible drug or not, in case of vesicant, for example or even irritants or central line is indicated rather than a peripheral one. But also, the predicted dwell time, the need for monitoring hemodynamic monitoring, the need for multiple infusions, frequent assembly, frequency of access to the system, or even if the patients is hospitalized or not, we may choose different vascular access devices in all these cases.

Dr. Caudle:
And when a patient is ready to be transitioned from emergency care to other providers, what are some challenges that you and your colleagues experience?

Dr. Pinelli:
I think that the main challenge is to change clinicians' mentality. In fact, very few things about patient's vascular access need in a proactive manner. What does it mean? It means that at any time we plan a vascular access, we should have at least a medium term, terms size taking into account which will be that patient's vascular access needs in the future.

I think it's a cultural issue and organizational issue. First, we need to educate clinicians to think about the importance of vascular access and to choose the right vascular access. And second to provide them with the precise hospital policies and decisional algorithms.

Dr. Caudle:
So, let's dive into that idea even further. Can you talk to us briefly about this philosophy of 'the right device for the right patient at the right time'?

Dr. Pinelli:
OK. Let's consider two scenarios. The first one, the patient's a patient coming from the A&E into wards, those patients very often have a short peripheral canula inserted somewhere and somehow. This is because the target of the clinicians working in the A&E is to guarantee and access for the immediate therapy. But for example, if the patient is a COPD and is diagnosed with pneumonia he/she probably will stay in hospital at least for 10 days. So, a short peripheral canula, as we know, will be functioning for 24 to 48 hours and then fail. So, if the patient needs just peripheral compatible antibiotics and some fluids, why not choose a long-lasting peripheral device such as mini-midline or a midline from the beginning in the A&E?

And let's consider another scenario, for example, the patient discharged from an ICU into lower level of care environment, I see patients recovered from an active phase who needs several more days in the ward in the rehab, still needing fluids, non-peripheral compatible antibiotics, electrolytes, and etc. The patient is carrying a CICC, is it the correct device? No, actually. It is not. Too high risk of infection and dislodgement. So, a peripheral inserted catheter, maybe a double lumen, might be more appropriate. So, the right device for 'the right patient at the right time' means that we at any time have to have in our mind which are the patient's vascular access needs in the present moment and which will be the needs for the future. And therefore, we choose vascular access accordingly. Sometimes it may be challenging, but it's worth do it. This is also what guideline guidelines indicate us, by the way.

Dr. Caudle:
Hmm. Excellent. And in addition to right device considerations that you just mentioned to ease this transition out of emergency departments, what kinds of supportive methods or technologies have you also found helpful to the cause?

Dr. Pinelli:
Well I think that ultrasound have revolutionized the field of vascular access. Because it's a safe, accurate and cost-effective technology. We cannot even think to a central vascular access or a midline without the use of ultrasound, not only for venipuncture recently the concept of a global use of ultrasound has gained popularity among vascular access specialists. This concept refers to the possibility of using ultrasound for the navigation of the guidewire and for the catheter to check the correct location of the catheter tip to rule out immediate complications, such as malpositioning, pneumothorax or hemothorax, or late complications such as thrombosis or fibroblastic sleeve. And in fact, guidelines strongly recommend ultrasound.

Another very, very important point is the closure management and selecting the right closure device. We can resume this concept with two words which must sound like a mantra to us. And these two words are 'secure' and 'protect.' This is very important. We must abandon stitches, all guidelines agree on that because they increase the risk of infection, they are inferior to sutural-less securement systems in terms of, uh, risk of dislodgement. We must, on the contrary, use suture-less devices, the adhesive ones the subcutaneously anchored devices, the integrated devices and the cyanoacrylate glue. At the end, we must protect our exit site with a transparent semi-permeable dressing.

Dr. Caudle:
Before we close, Dr. Pinelli, is there anything up-and-coming in this territory that you think could make this transition of care beyond emergency settings even smoother?

Dr. Pinelli:
Oh yes. In my opinion, there are four things that are the most relevant technological improvements for now, in the future. The first, is wireless technology. The wireless ultrasound probes and the wireless intracavitary EKG for tip location. Second, the all-in-one ultrasound probes, the possibility of having a linear, convex, and sectoral probes all in one. Third, the subcutaneously anchored devices, which are probably the best systems to secure our central vascular access. And fourth, the glue for the exit site and for all the devices because of their stabilization action, hemostatic action, and antibacterial action.

Dr. Caudle:
Well, with those forward-looking thoughts in mind, I would like to thank my guest, Dr. Fulvio Pinelli, for joining me to share strategies for addressing gaps in care. Dr. Pinelli, it was great having you on the program.

Dr. Pinelli:
Thank you. Thank you very much.

Announcer:
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