Abstract

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Peripheral Vascular Access in Internal Medicine Department

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Objective: The aim of study was to weigh risk and benefits of placing peripheral Venus device, comparing the angiocath needle with the midline catheter MC, and to provide economic evidence for decision-makers to choose the most appropriate device. Angiocath are peripheral venous catheters between 1.9-4.5 cm in length, simple to insert by nurses and placed in superficial vein. It's recommended close monitoring and removal every 96 h or earlier for complications as phlebitis, thrombophlebitis, infiltration, extravasation and infection. MC are peripheral venous devices between 8 to 25 cm in length. They can be inserted under ultrasound (US). MC are routinely used for two to six weeks and are appropriate for all intravenous fluids. We considered also the patient's quality of life and the complications associated.

Methods: we enrolled 60 pts. from April 2021 to March 2022. 30 pts. underwent angiocath insertion Indeed. Whereas, MC was placed in thirty pts. with US placement of midline has been used and the device was removed only when no longer needed or if a complication occurred. Adverse events are vein thrombosis, systemic or local infections and catheter dysfunction.

Results: 400 angiocath were placed considering occurrence of complications, accidental removal and 3 or more annulation attempts failed in patents lack of readily visible or palpable veins. This translated to a cost of € 2700 annually (€ 6 each). Catheter replacement implies repeated venipuncture with patient discomfort and increased nurse workload. Whereas, 30-32 MC were successful annulated. The use of ultrasound guidance has improved first-attempt success rates with a cost of € 1500 annually (€ 49 each), patient satisfaction and decreased nurse workload and complications. The annually average costs for insertion and maintenance of MC were lower than angiocaths, the complication free rate of MC was higher than angiocaths and the cost-effectiveness was lower than angiocaths.

Conclusions: MC get more blood flow and this justifies the lower risk of mechanical obstructions or phlebitis than peripheral catheters. Furthermore MC has been associated with lower rates of infection than CVC. Early selection for their use might be a cost-effective approach to facilitate early central line removal and avoid complications associated with central venous catheters. Madeline improve patient outcome and reduce health-care costs. The use of MC is a potentially cost effective and safe approach for venous access in the internal medicine department. Use of MC is supported for pts. with difficult venous access to avoid using the only available vessel with a catheter that could, if necessary, not ensure a sufficient indwelling time and which may be difficult to replace. It would seem reasonable to pursue placement early in the course of hospitalization in patient requiring medium-to long-term intravenous therapy. MC should be evaluated not only for their safety and effectiveness but also for their economic attributes because economic attributes, such as cost or cost-effectiveness, are also important influencing factors in the selection of venous access devices. Furthermore the establishment of an effective midline program in pts. with difficult-to access veins is a measure to reduce use of central venous access devices as a potential for cost-savings through longer dwell times, lower rates of infection, of thrombosis, and improved patient satisfaction via a reduction in repeated annulation.