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Using the MAGIC® and DAV Expert® algorithms in management of venous catheters during intensive care

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Introduction: Proper care for venous catheters is essential in managing critically ill patients, assessing clinical needs, duration of access, and specific patient conditions.(1) Certain tools can be used to make well-informed, evidence-based choices as part of safe, harm-free and minimally invasive care practices. The Michigan Appropriateness Guide for Intravenous Access (MAGIC®).(2) and the Venous Access Device (VAD) Expert® were used in this study. **Objectives:** Compare recommendations provided under the MAGIC® and DAV Expert® algorithms as part of decision-making processes when choosing between catheters based on the current realities of two intensive care units at a general hospital in Rio de Janeiro. **Methods:** Cross-sectional, descriptive study. Data was collected at two intensive care units (ICU) in a general hospital in Rio de Janeiro between January 2019 and December 2020. The use of a Free and Informed Consent Form was waived for this study since it comprises an analysis of medical records. Centrally inserted central venous catheters (CVCs) were selected that had been punctured in the intensive care unit in patients over the age of 18 and remained in the patient for more than 48 hours. Provided indications for CVC puncture options were listed. These indications were subsequently entered into the MAGIC® and DAV Expert® algorithms in order to compare potential options. **Results:** Two hundred forty-eight catheters were evaluated in 158 patients. Identified indications for the use of CVCs included: vasoactive amines (n=126; 50.81%), prolonged antibiotic therapy (n=216; 87.1%), parenteral nutrition (n=5; 2.02%) and failure in peripheral venous access (n=5; 2.02%). The same patient could have more than one indication. After data were collected, suggestions provided by the two tools for the situations presented were analyzed. For the entirety of situations in which a CVC was installed, there were other options that may have been considered a potential choice as they were less invasive and accounted for the length of therapy. These options included: Peripherally Inserted Central Catheter (PICC), midline and mini midline. DAV expert® considers the use of the mini midline catheter, differentiating between elective and emergency situations, age range and also offers suggestions for preferred puncture sites. MAGIC®, on the other hand, directs decision making in a more straightforward manner, without considering specific details and does not make mention the mini midline. **Conclusion:** Based on the recommendations provided by the algorithms studied, it was observed that it is important to assess situations individually, according to patients' needs, seeking to make use of the least invasion procedures. It is important to note that, in addition to centrally inserted CVCs, the study scenario only included short peripheral catheter and the PICC as potential options. This study will also potentially serve to subsidize future assessment of options for devices that may assist in treating hospitalized patients.

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