

Review of vascular access assessment and decision-making in Brazil: the potential role of a Portuguese version of the DAV-EXP app.

Mauro PITTIRUTI*, Patricia BARBOSA**, Laura RODRIGUES***, Kathy KOKOTIS***

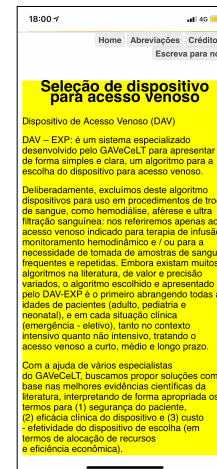
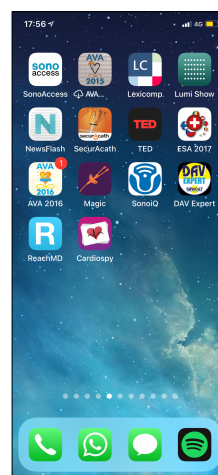
*Catholic University, Rome, Italy; **Stryker, Sao Paulo, Brazil; ***Becton Dickinson, Salt Lake City, USA

Background: Peripherally inserted central catheters (PICCs) are widely used in Brazil and are commonly inserted by skilled nurses, adopting international recommendations for good clinical practice, such as ultrasound-guided puncture, modified Seldinger technique, and tip location by intracavitary ECG. Though, there is no national guideline or algorithm to guide the appropriate selection of venous access device (VAD) and – in particular - the choice between PICCs and centrally inserted central catheters (CICCs).

Method: We have conducted a multifaceted analysis to determine the availability of patient assessment algorithms for VAD choice in Brazil: (a) a review of the Brazilian literature on patient assessment and VAD selection (b) evaluation of local nursing guidelines and PICC workbooks; (c) interviews with local VAD teams.

Results: Three relevant articles were found: (1) Santolim (BJN 2012), which demonstrates a reduction of peripheral phlebitis by using an algorithm for vascular access by a bedside nursing decision-making; (2) Lopes (JAVA 2014), which discusses the drugs most frequently utilized for PICCs and suggests the implementation of a hospital protocol; (3) Santolim (Acta Ortop Bras 2018), which addresses the choice of the vascular access device. Nurses' guidelines and PICC workbooks indicate incompatible drugs but do not define a process for vascular access assessment. Some of the hospitals interviewed had considered the MAGIC app, but this didn't meet their expectations as it discourages the use of PICCs rather than providing a tool for choosing between PICCs and CICCs; for example, MAGIC excludes the use of PICC in ICU, which – on the contrary - is increasing (due to the advantage of decreasing insertion complications such as pneumothorax and carotid arterial puncture).

Discussion and conclusions: As a result of our analysis, we concluded that there is not one satisfactory algorithm or app that can be used for vascular access decision-making in Brazil. We reviewed the DAV Expert app (developed by GAVeCeLT – the Italian Group of Venous Access Devices) and we judged it appropriate for applicability to the Brazilian approach to VAD selection and local product availability. We translated the DAV Expert from Italian to Portuguese and we made it available on the web in 2020, for the benefit of all clinicians from Brazil and from other Portuguese speaking Countries.



DAV-EXP is a free application available for all smartphones (look for it in Apple Store or in Google Play) and in four different languages (English, Italian, Portuguese, Spanish). It consists in an expert system developed by GAVeCeLT (the Italian Group of Venous Access Devices) to present an algorithm for choosing the most suitable venous access device (VAD=DAV) in different populations of patients (adults - children - neonate) both in emergency and in elective situations. The DAV-Expert suggests solutions based on the best scientific evidence in the literature, interpreting appropriateness in terms of (1) safety for the patient, (2) clinical effectiveness of the device, and (3) cost-effectiveness of the chosen device in terms of allocation of resources and economic efficiency.



www.gavecelt.it
mauropittiruti@me.com