

The ABBA study: Assess Better Before Access for peripheral and central vascular access in a neonatal population.

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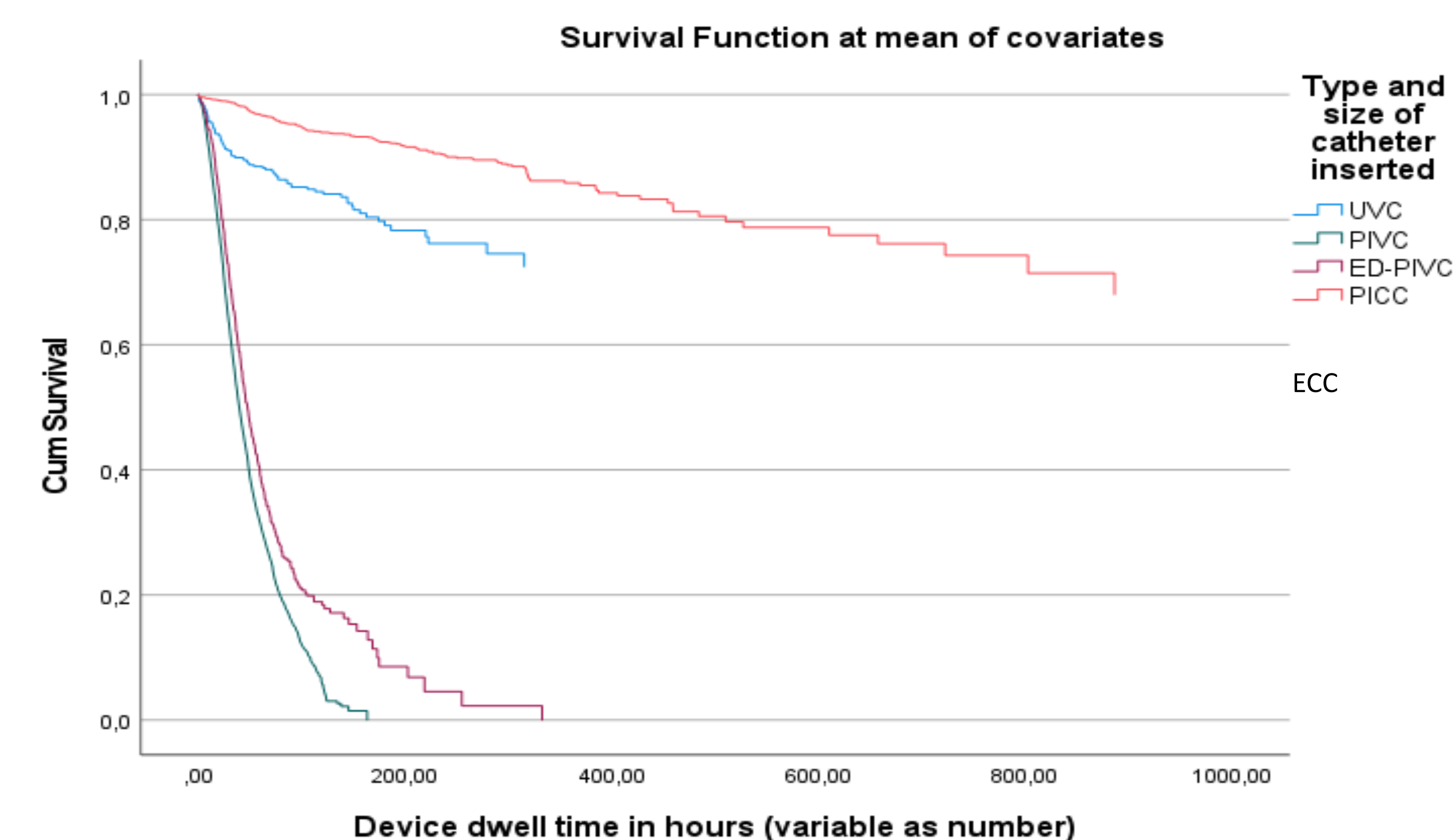
Background

Vascular access devices (VADs) play a vital role within the neonatal intensive care unit (NICU). However, VAD-use is not without significant risks, with complications such as infection, thrombosis, device occlusion and infiltration/extravasation frequently contributing to device-related failures and increase the risk of significant patient harm or injury.

Method and Setting

A retrospective, single-center study in a large 112-bed NICU in Qatar that routinely collected intravenous device data from January 2016 to December 2018 was evaluated. The outcome of interest was to identify and evaluate the relationships between unmodifiable and potentially modifiable factors and **Assess** the situation and patients **Better Before** initiating vascular **Access** (ABBA), potentially reducing unwarranted complication rates leading to therapy failure within the neonatal setting.

The aim of the study was to determine the prevalence of peripheral (*PIVC, ED-PIVC) versus central (*ECC, UVC) device-related failures and its associated complications (e.g., infection, occlusion, infiltration, and extravasation), evaluate VAD efficacy, identify any modifiable risk factors, as lastly, to drive innovation, evidence-based practices and policy development.



*PIVC: Peripheral IntraVenous Catheter, ED-PIVC: Extended Dwell-PIVC, ECC: Epicutaneo-Caval Catheter, UVC: umbilical venous catheter

Ideally and in every patient assessment stage, the team should follow the “5Rights for Vascular Access” i.e., the Right device, for the Right vein, with the Right therapy, for the Right duration, for the Right patient.

Results

During the study period, 23858 VADs were inserted. Of these, 89.3% were peripheral intravenous catheters (PIVCs). The risk for the development of a VAD-related complication was the highest amongst the peripheral vascular access devices when compared to central VADs, including central line associated blood stream infections (CLABSI).

Conclusion

Four subgroups of VAD were identified (peripheral intravenous catheters, extended dwell-peripheral intravenous devices, epicutaneo-caval catheters and umbilical venous catheters). Central vascular access (epicutaneo-caval catheters and umbilical venous catheters) had the least reported complications. Future research toward improving patient and intravenous therapy-related outcomes plays an important role. It requires a focus on innovations and clinical advancements in the world of neonatology and vascular access devices.