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Background

When providing central venous access in an emergency situation, CICC is indicated according to current guidelines. However to us PICC seems to be as suitable as CICC in daily ICU routine.

The aim of the study was to assess the safety and feasibility of PICC in an emergency in the Internal medicine ICU (IM-ICU).

Objectives and methods

The IM-ICU at the Internal Medicine Clinic at Motol University Hospital has twelve beds, four of which can be used for artificial ventilation. The medical and nursing team cares for patients in severe conditions with internal diseases, septic conditions, acute intoxications, etc. A wide spectrum of elimination methods - continuous and intermittent - is also performed here.

In an emergency situations a PICC is inserted into a patient based on the indication of the attending physician. All PICCs are inserted at the patient's bedside using ultrasound and ECG navigation. In 2022, the number of inserted PICCs in relation to all admitted patients, their safety and feasibility were evaluated.

Results

During 2022, PICC was indicated and inserted in the IM-ICU in 101 patients (15.7% of all admissions), females 47, males 54. Median of the age was 66 (23-86).

In 95 cases a PICC was inserted at the patient's bedside under ultrasound and ECG navigation without complications. In 6 patients the introduction was not successful, however it was inserted as an elective venous access later on. Median insertion time was 15 minutes.

PICC was inserted from the right side in 66%, most often in the brachial vein - in 76 patients.

36 PICCs were single-lumen, 54 double-lumen and 5 three-lumen.

Median dwelling time was 16 days (1-125). 29 patients died during dwelling of the catheter.

During catheter dwelling there were 14 complications (2x catheter occlusion, 3x catheter loop causing dysfunction, 9x accidental withdrawal). No infectious and thrombotic complications were detected.

In the IM-ICU 130 CICC were inserted during the same period of time (20,2% of all admissions). Compared to PICCs (15,7% of all admissions), that makes the PICC the equivalent central venous catheter option for our patients.



Conclusions

We conclude that the insertion of PICC is safe and feasible in indicated cases in emergency situations in patients admitted to the IM-ICU.

The multiple-lumen PICCs are more suitable for ICU care (need of administration of medicaments through multiple lines, hemodynamical monitoring).

We did not recorded higher number of serious complications connected to ICU environment.

We prefer insertion of PICC in situations where introduction of a CICC is associated with a high risk of complications (e.g. in coagulation disorder), the introduction of a PICC is safer and at the same time ensures all the required functions.

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