

ABSTRACT

Presented dissertation deals with the problematics of optimal choice of venous access for each hospitalized patient at standard internal wards. Introduction of vascular access must be safe for the patient and must allow the fulfillment of all the goals for which it was indicated. In recent years, in addition to peripheral cannulas and non-tunneled central catheters, introduction of midline catheters and PICC gets into everyday practice. The choice of optimal vascular access device since admition can bring benefit to the patients in the form of decline of complications.

Goal: The goal of master thesis was to prove that the use of new types of vascular access devices has influence on the decline of vascular access devices related complication occurrence.

Methods: To reach the goal we used a quantitative method of data collection during certain time period using created collection protocols. Research investigation took place from November 2017 to February 2018 at two standard wards of Department of Internal Medicine FN Motol.

Results: A total of 350 venous access devices (271 peripheral cannulas, 54 midline catheters, 35 PICC) in 187 hospitalized patients was monitored. Prevalence of complications, average length of placement and reasons for extraction of individual vascular access devices was analyzed. In peripheral venous cannulas a complication was present in 101 cases per 1000 catheter days, in midline catheters it was 15 complications and in PICC 3 complications per 1000 catheter days. A complication was the reason for extraction in cases 39% of peripheral cannulas, 28% of midline catheters and 14% of PICC. New vascular access device needed to be introduced in 33% cases of peripheral cannulas and 2% of midline catheter. Vascular device was no longer necessary in 27% cases of peripheral cannulas and 54% of both midline and PICC, death of the patient occurred in 16% cases of midline catheter and 34% of PICC. Median time of peripheral cannula placement in study population was 4 days. Median time of midline catheter placement was 12 days, and in PICC median time of placement was 15 days.

Results: Study results show that in patient with a need of peripheral venous access for time longer than one week, a midline catheter is more suitable than peripheral venous cannula. In patients who need intravenous application of drugs with pH lower than 5 or higher than 9 and in patients who need parenteral nutrition PICC presents the optimal vascular access device.

keywords: peripheral cannula, midline catheter, venous access, complication of venous access, active approach