

Hemodialysis tunneled catheters: five years analysis

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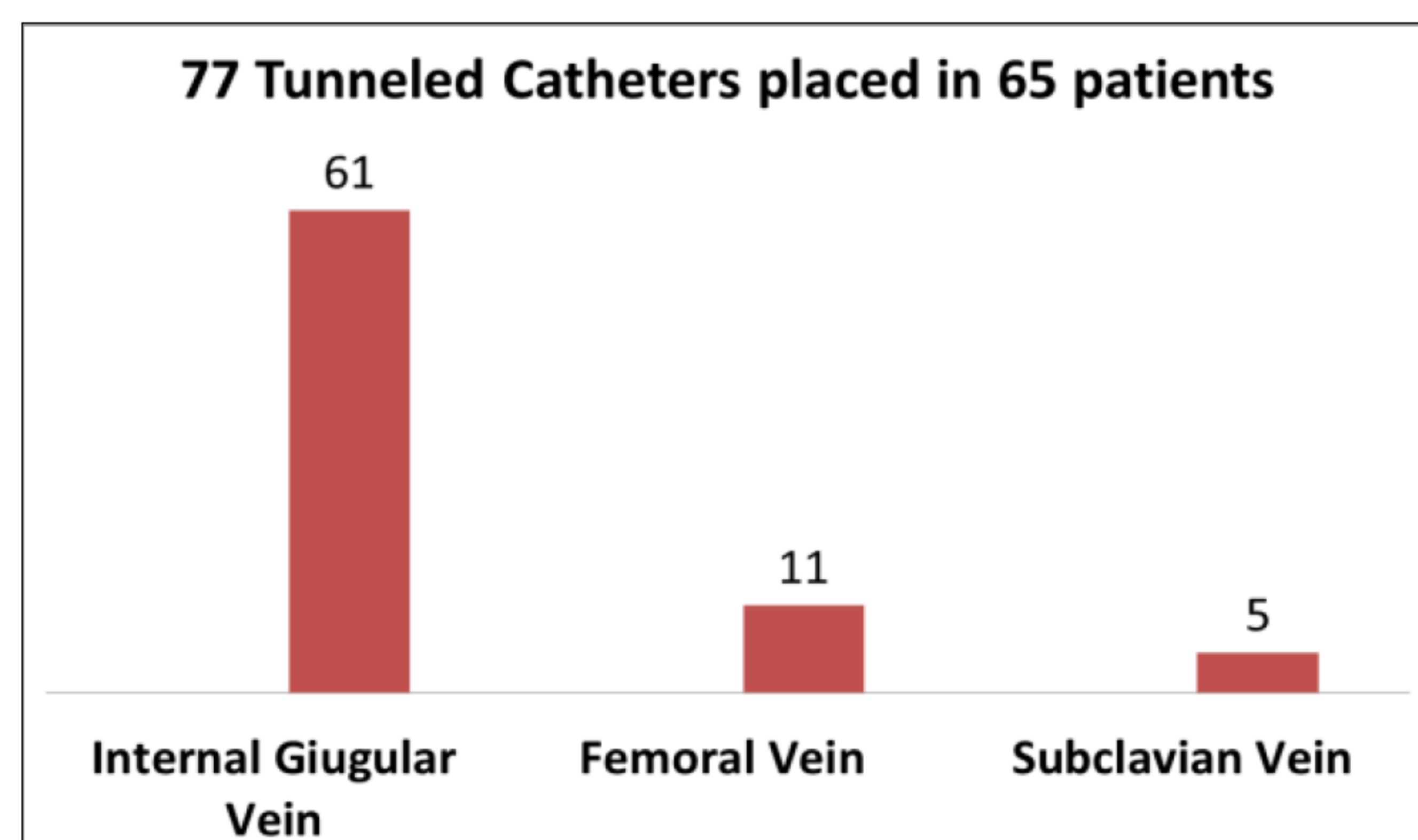
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INTRODUCTION AND AIMS

Optimal vascular access (VA) is vital for hemodialysis (HD) patients. The best VA remains arteriovenous fistula but its creation is not always feasible and often a central venous catheter (CVC) remains as permanent access particularly in ancient patients or in patients with cardiovascular comorbidities. The aim of our retrospective study is to evaluate the infection rate of tunneled central venous catheter (tCVC), bacteriologic analysis and correlation with tCVC characteristic.

METHOD

During 5 years, from January 2010 to December 2014, 77 tCVC were placed in 65 patients (mean aged 72+/-16 years). tCVC were placed by nephrologist in internal jugular vein, subclavian vein and femoral vein using ultrasonographic guide. Standard protocols, according to European Renal Best Practice (2010) detailing all aspects of preventive care, were used. Each tCVC was followed until it was removed or until the end of the study. tCVC were followed up for 25224 days. 61 tCVC were placed in jugular vein (79%), 11 tCVC in femoral vein (14%) and 5 tCVC in subclavian vein (7%). The diagnosis of infection was based on clinical evidence and positive blood culture with no sign of other infection site. We also evaluated the exit site/tunnel infection (ESI/TI) rate. Event rates were calculated per 1.000 catheter days.



RESULTS

Mean tCVC duration was 327,58 days. Catheter replacement recurred in 9 patients. Catheter dysfunction with loss of patency was the main cause of replacement. (0,28 per 1.000 days). Catheter related bloodstream infection (CRBI) were developed in 21 cases, We observed 29 ESI/TI: incidence for CRBI was 0,83 per 1000 catheter days and ESI/TI was 1,14 per 1000 catheter days. In ESI/TI the most common organism isolated was Staphilococcus epidermidis (41%), in CRBI the most common organism isolated were MRSA (48%) and MSSA (28%). The majority of CVC infections (93%) were cleared with systemic antibiotics and lock therapy. 5 tCVC were removed for recurrent CRBI (0,19 per 1.000 catheter days).

CONCLUSIONS

Our data suggest an high survival rate and a low rates of CRBI in tCVC. Infections were successfully treated conservatively in most cases. Careful nursing protocol concerning the type and frequency of CVC dressings may reduce the frequency of infection and early diagnosis can facilitate the rescue of the CVC with systemic antibiotic therapy. tCVC use in HD patients, as a first choice, is justified especially in patients with poor native peripheral vessels, in patients with steal syndrome's high risk and also with a low life expectancy.

catheter disfunction 0,28 per 1000 days
catheter bloodstream infection 0,83 per 1000 days
catheter removed for recurrent CRBI 0,19 per 1000 days
Exit site/ Tunnel infection 1,14 per 1000 days

