

# LONG-TERM TUNNELLED HEMODIALYSIS CATHETERS: FEMORAL VS INTERNAL JUGULAR VEIN INSERTION A SINGLE CENTRE 10 YEARS EXPERIENCE

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**INTRODUCTION AND OBJECTIVES:** tunnelled central vein catheters (CVCs) are usually considered a second choice for vascular hemodialysis access in patients who can't benefit from arteriovenous fistulas or grafts. However, their usage is growing due to the steadily increasing mean age and importance of comorbidities in hemodialytic population. Among insertion sites for chronic treatment, femoral veins are often reserved for patients with contraindicated internal jugular vein approach because of a supposed lower intradialytic blood flow and higher risk of complications. Nevertheless, few studies compare these two sites and their results are discordant. Our purpose is comparing our experience in femoral and internal jugular vein approach for tunnelled CVCs insertion, in terms of efficiency and safety.

**METHODS:** we analyzed all tunnelled CVCs for chronic hemodialysis treatment placed in our Centre since January 1st 2006. Data evaluated were sex, age at insertion, insertion site, type of catheter, CVCs mean and total days of life, mean blood flow, exit-site and CVC-related infections rates and reasons of abandonment. Results are updated to December 31st 2016 and data are expressed as mean±standard deviation. Statistical significance ( $P<0.05$ ) was evaluated with Student's t-test. No differences were found between right/left side and different types of CVCs. Abdomen subcutaneous tunnelling was performed for all femoral CVCs. All CVCs with less than 30 days of life due to patient's death for other causes were discarded.

**RESULTS:** 209 tunnelled CVCs were placed in our Centre between 2006 and 2016 for 162 patients, 91 males and 71 females, mean age  $74.5\pm 11.6$  years. Femoral CVCs were 35 for 32 patients, 21 right and 14 left (17 males, 15 females, mean age,  $75.5\pm 9$  years): 32 MedComp® Tesio and 3 Bellco® Gemini Bellcath. Internal jugular CVCs were 174 for 136 patients, 137 right and 37 left (78 males, 58 females, mean age  $74.4\pm 12.1$  years). 64 MedComp® Tesio, 14 Bellco® Gemini Bellcath, 12 Bard® Soft-Cell, 36 Bard® HemoStar, 40 Bard® Hemoglide, 6 Mahurkar® Maxid, 1 Medcomp® Hemoflow, 1 Joline®.

Mean life was 325.6 days for femoral CVCs and 530.4 days for internal jugular ones ( $P<0.05$ ). (fig.1)

Total life was 11395 days for femoral CVCs and 92286 days for internal jugular ones.

Mean intradialytic blood flow for femoral CVCs was  $271.1\pm 30.3$  ml/min vs  $279.3\pm 24.8$  ml/min for internal jugular ones ( $P=NS$ ). (fig.2)

CVC-related infections in femoral group were 1.23 per 1000 CVC days vs 1 per 1000 CVC days in internal jugular group ( $P=NS$ ). (fig.3)

Exit-site infections in femoral group were 0.35 per 1000 CVC days vs 0.73 per 1000 CVC days in internal jugular group ( $P<0.05$ ). (fig.4)

Reasons of abandonment were similar in both groups as showed in figure 5.

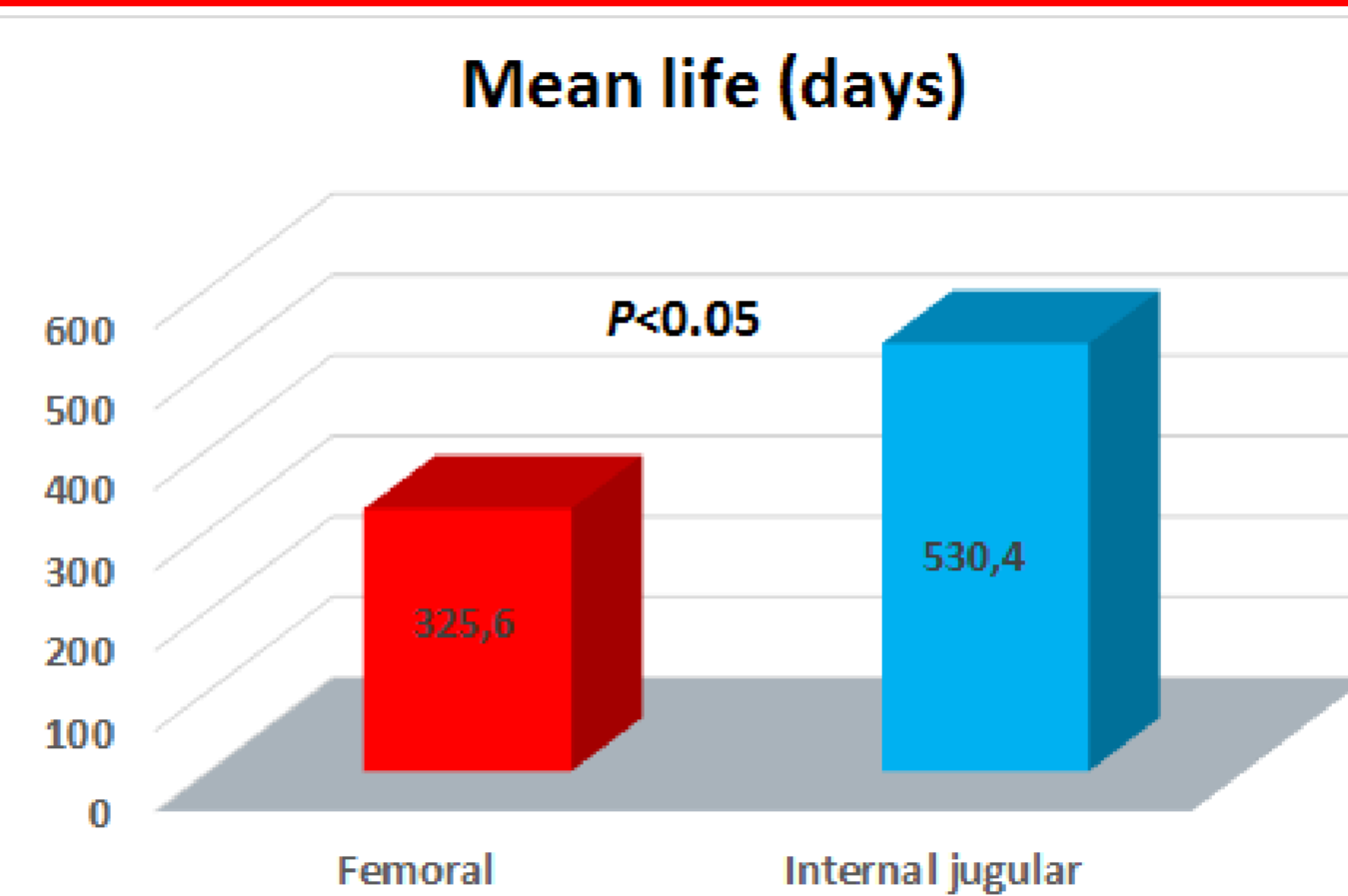


Figure 1

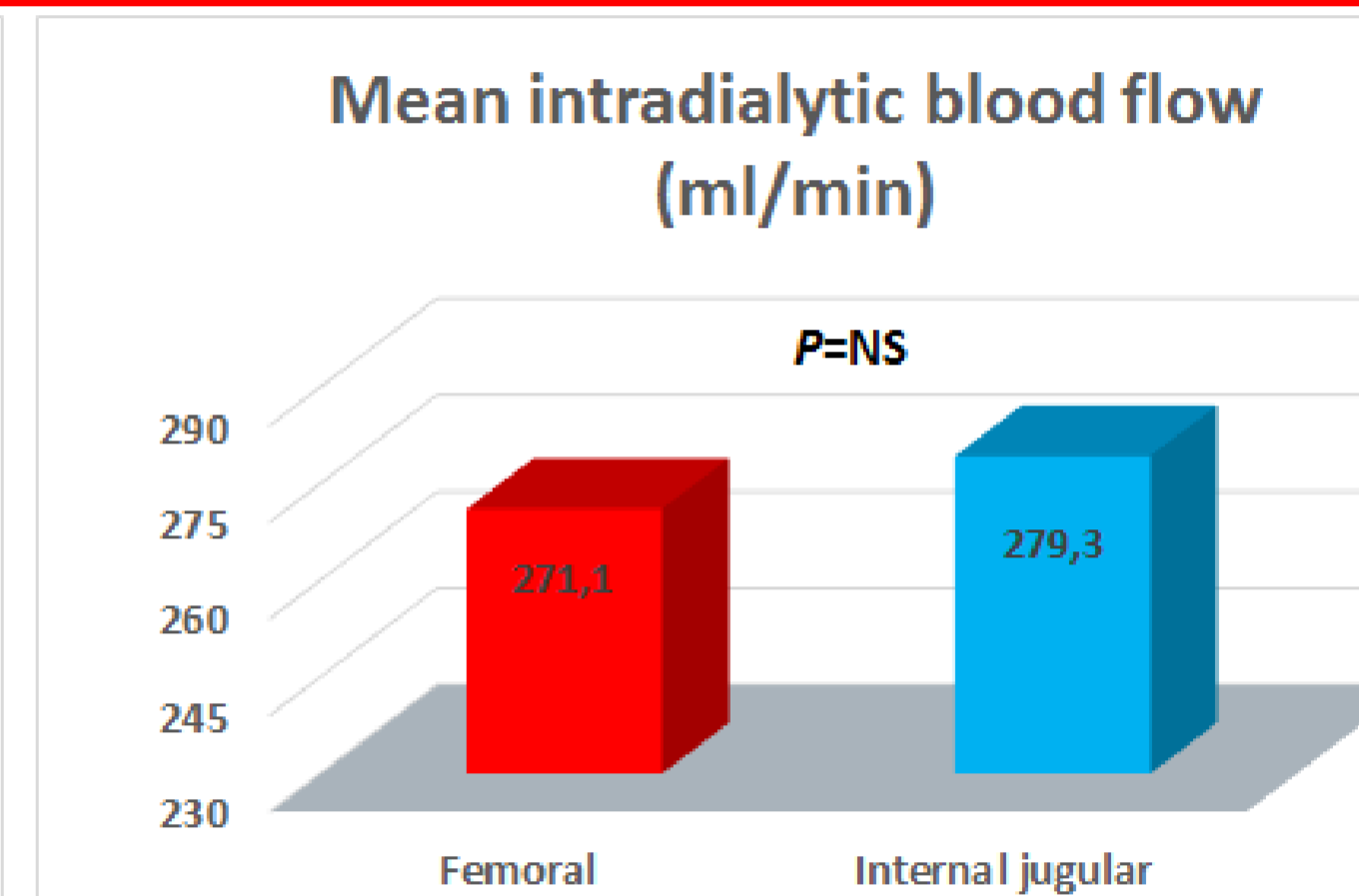


Figure 2

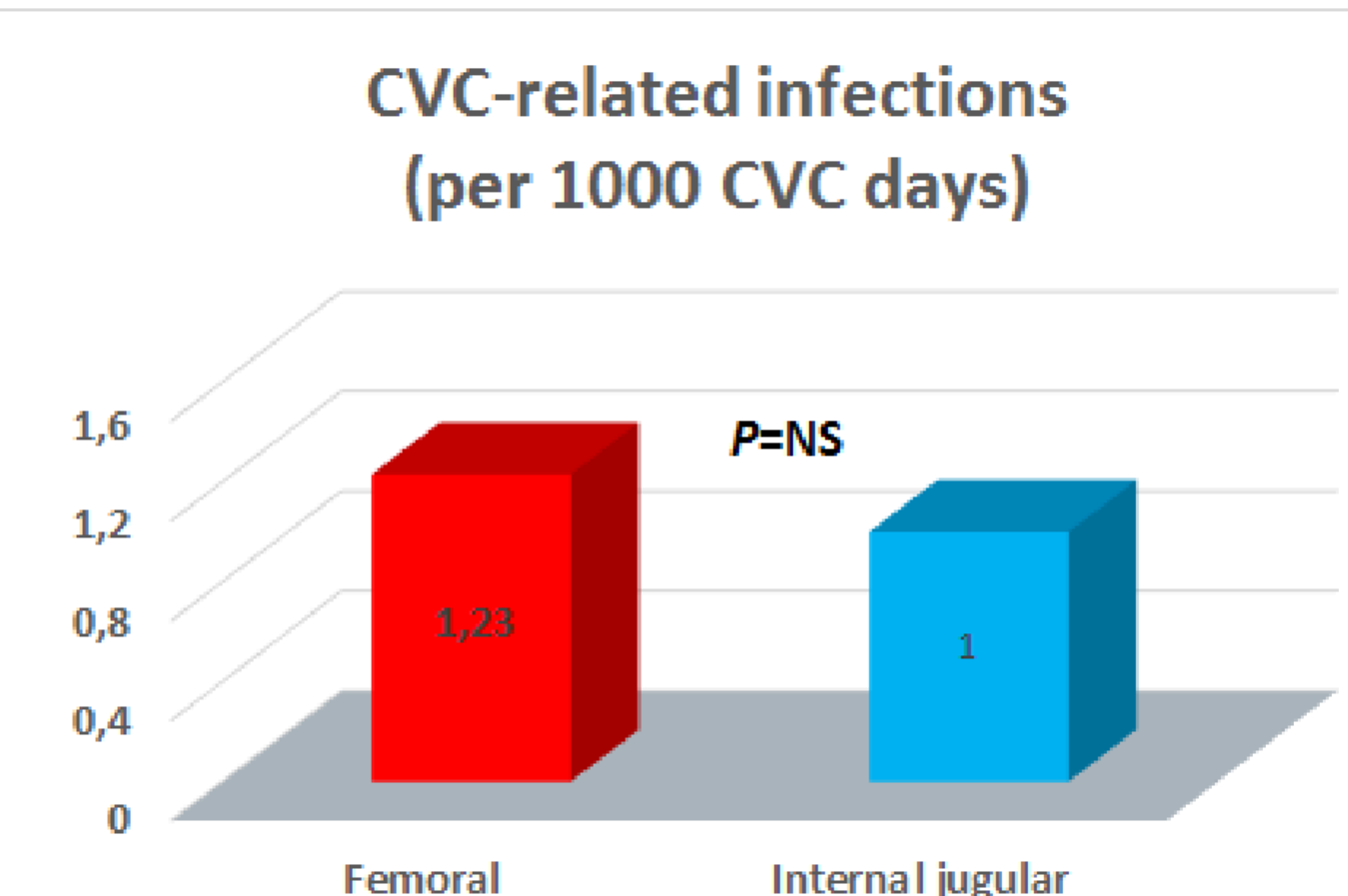


Figure 3

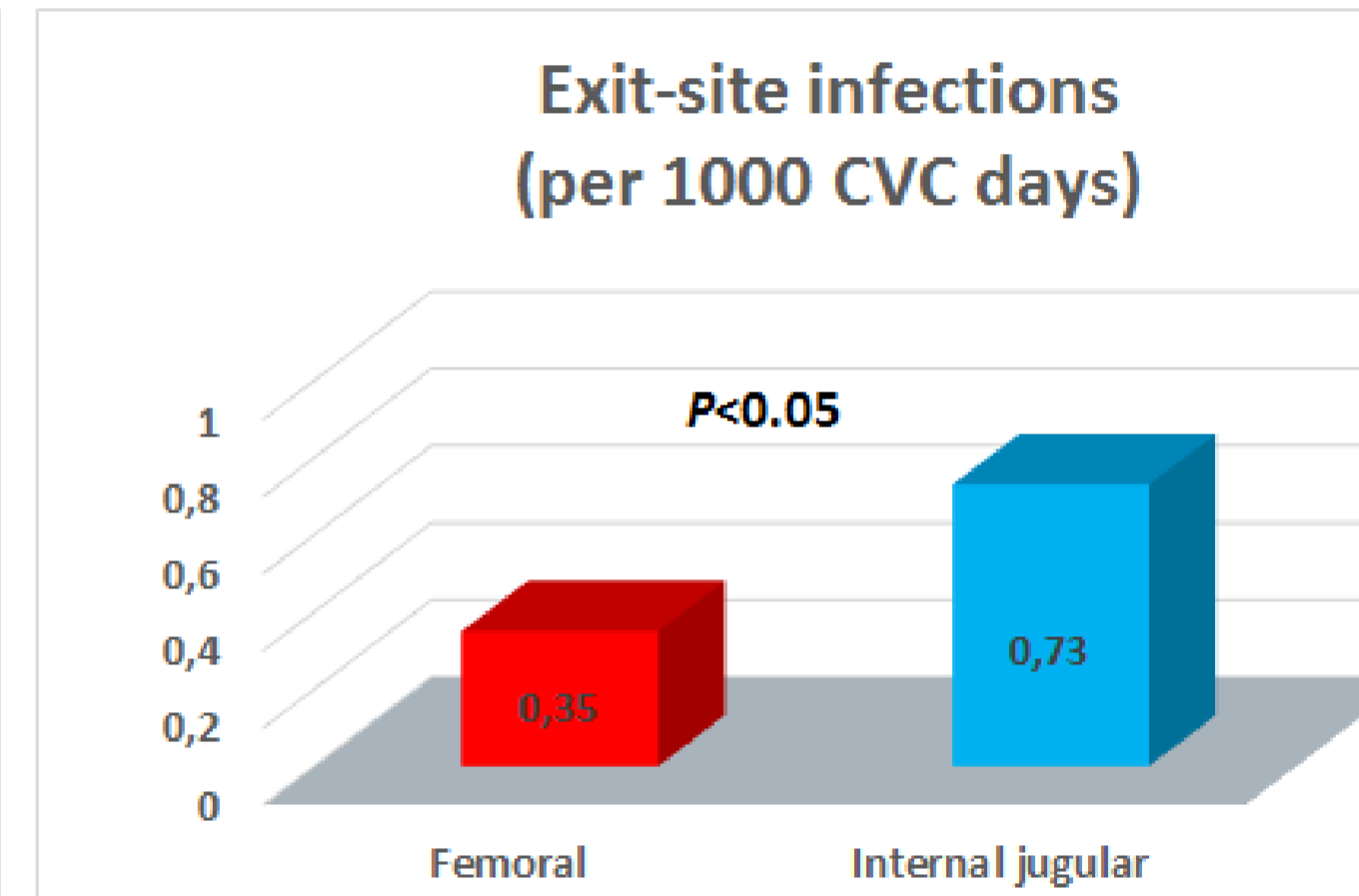


Figure 4

## Causes of abandonment

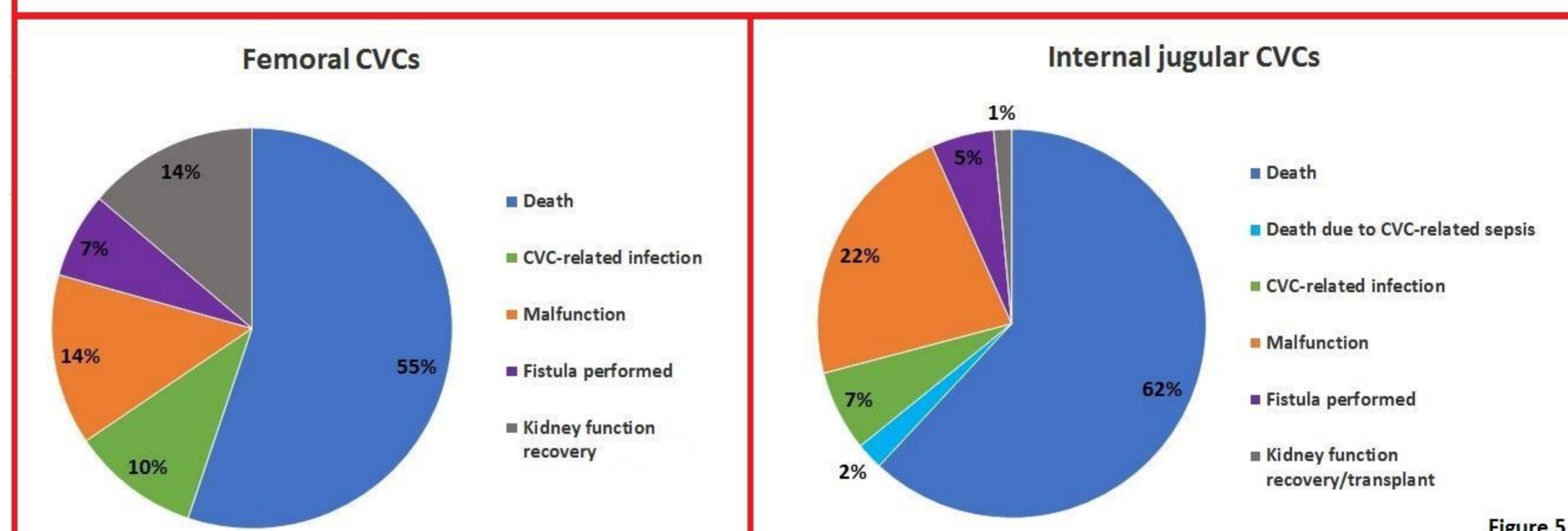


Figure 5

**CONCLUSIONS:** femoral CVCs with abdomen subcutaneous tunnelling can present same efficiency in terms of mean intradialytic blood flow vs internal jugular ones with a similar risk of CVC-related infections. Besides, in our patients, exit-site infection rate was significantly lower for femoral group, probably due to a major attention in CVC management for the relative uncommon insertion site. The lower mean CVC life for femoral group doesn't appear to be associated with higher rates of malfunction or infections and must be correlated in further studies with comorbidities and patient's risk profile.

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