

Zuzana Mrkvova, Adela Prchlikova, Martina Filipova, Tomas Arpas, Samuel Hricko, Dominik Fric, Lucie Ehrlichova, Stepan Tucek, Stepan Hrabovsky.

Background

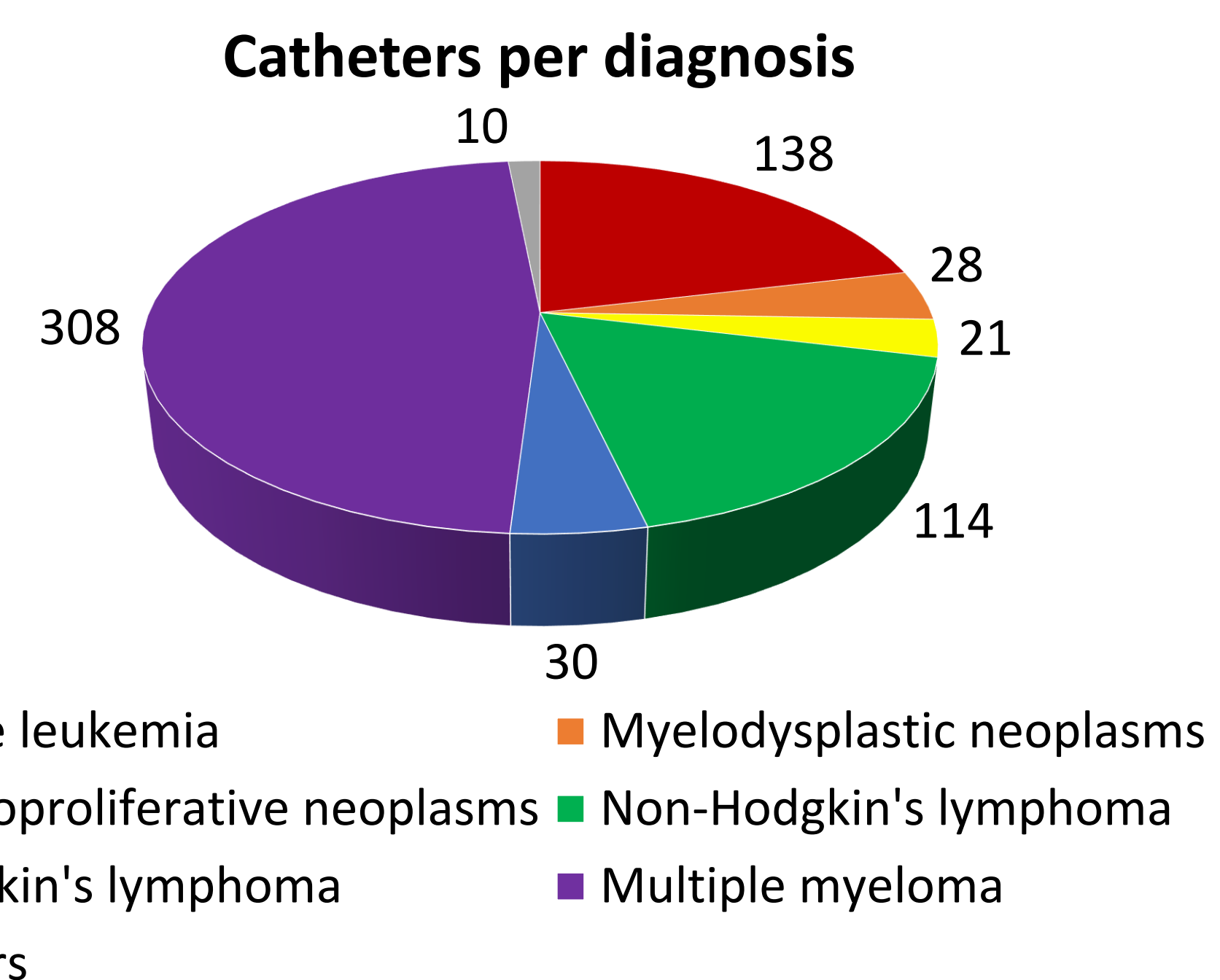
- Patients undergoing hematopoietic stem cell transplantation (HSCT) comprise a distinct category at extreme risk of severe complications, such as infections and hemorrhage.
- Most of these patients require central venous catheters (CVCs) for treatment administration.
- The implementation of the Safe Insertion of Centrally Inserted Central Catheters Protocol (SIC) into routine practice aims to prevent CVC-related complications.

Objectives and methods

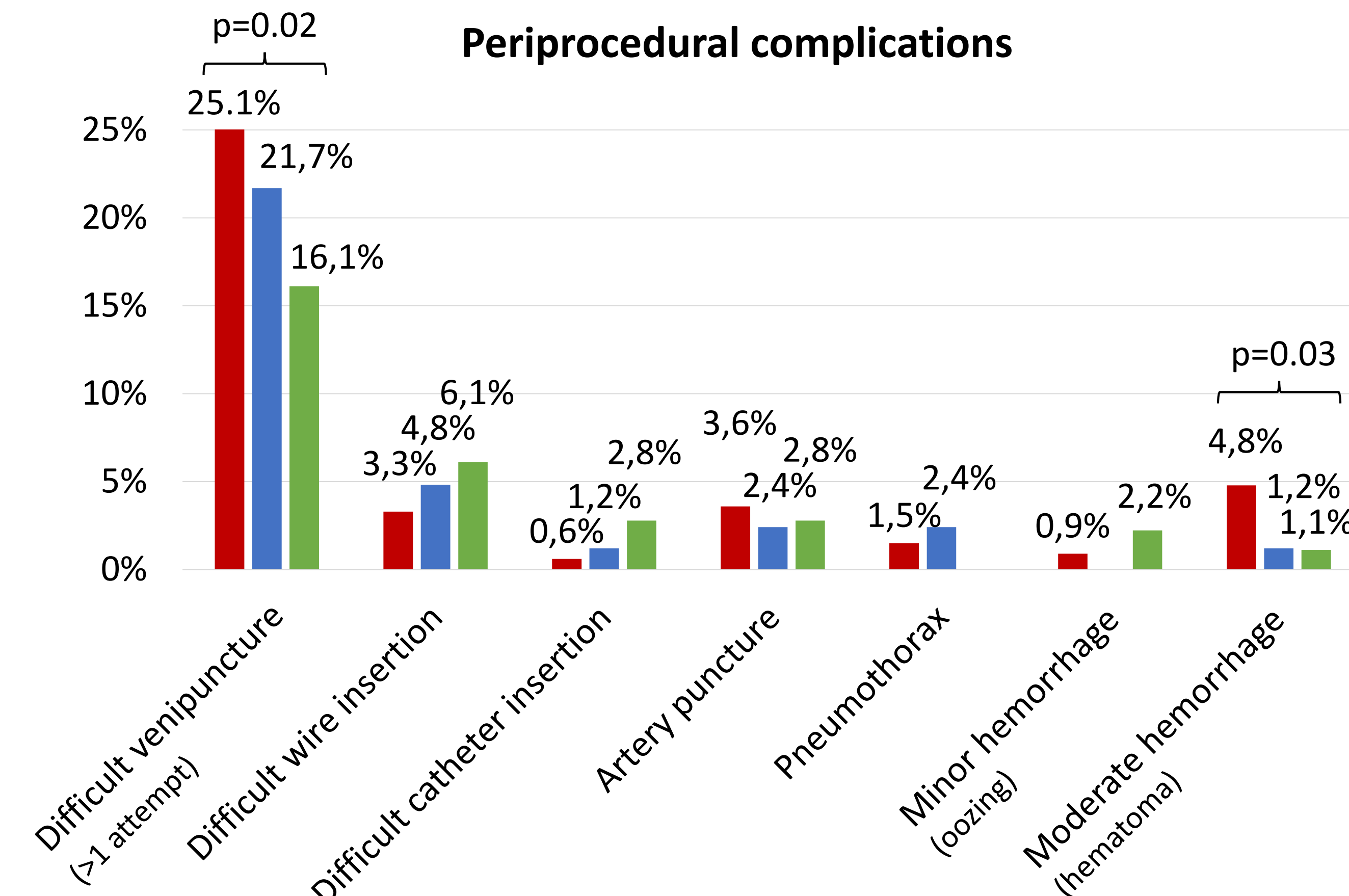
- In this 5-year single-center retrospective study, we analyzed the effect of SIC protocol implementation on CVC-associated complications in patients undergoing HSCT at a major hematological/oncological center in the Czech Republic.

Results

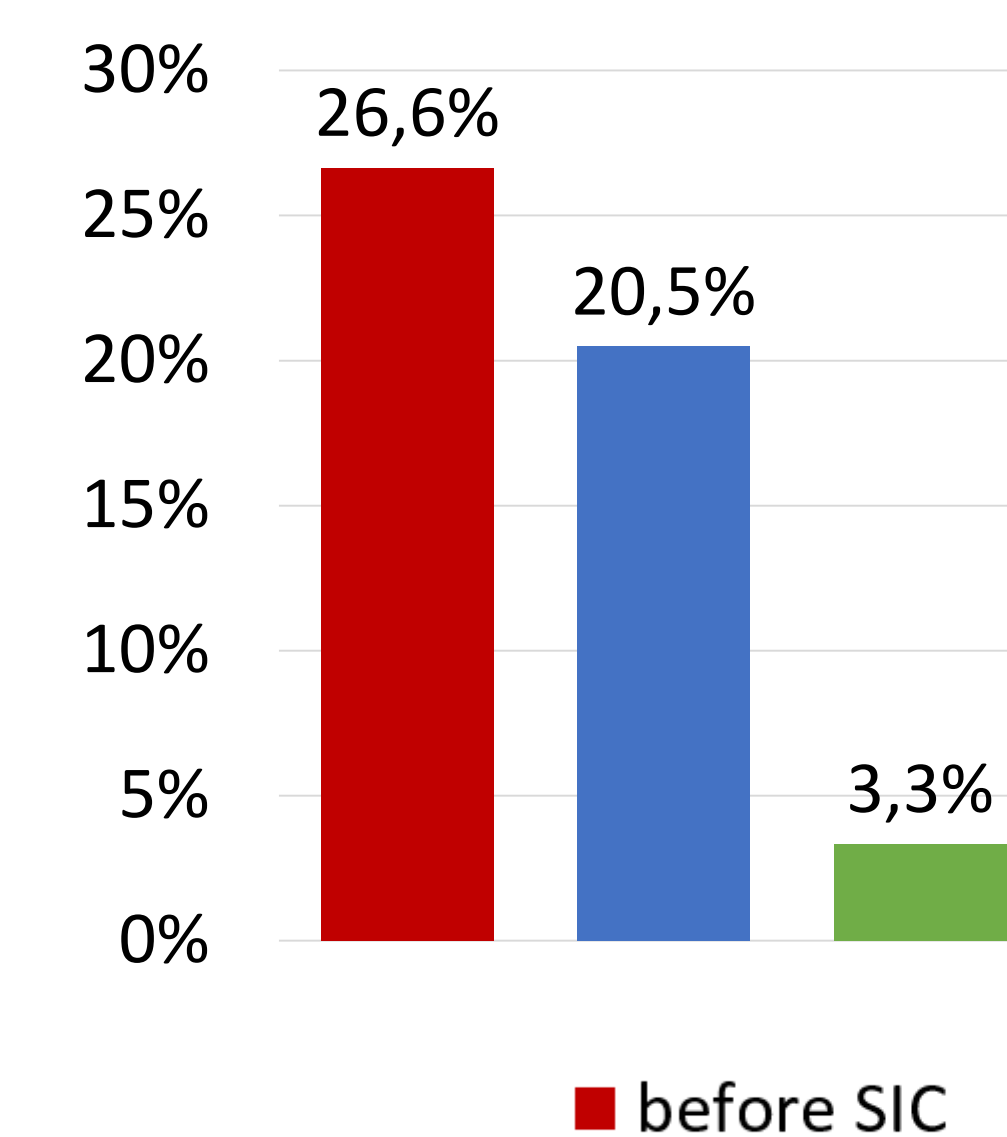
- We have implanted **597 CVCs** to **457 patients** undergoing HSCT from 2019 to 2023, with overall dwell-time of **11,748 catheter-days**.
- There were 37% allogeneic and 63% autologous HSCTs.



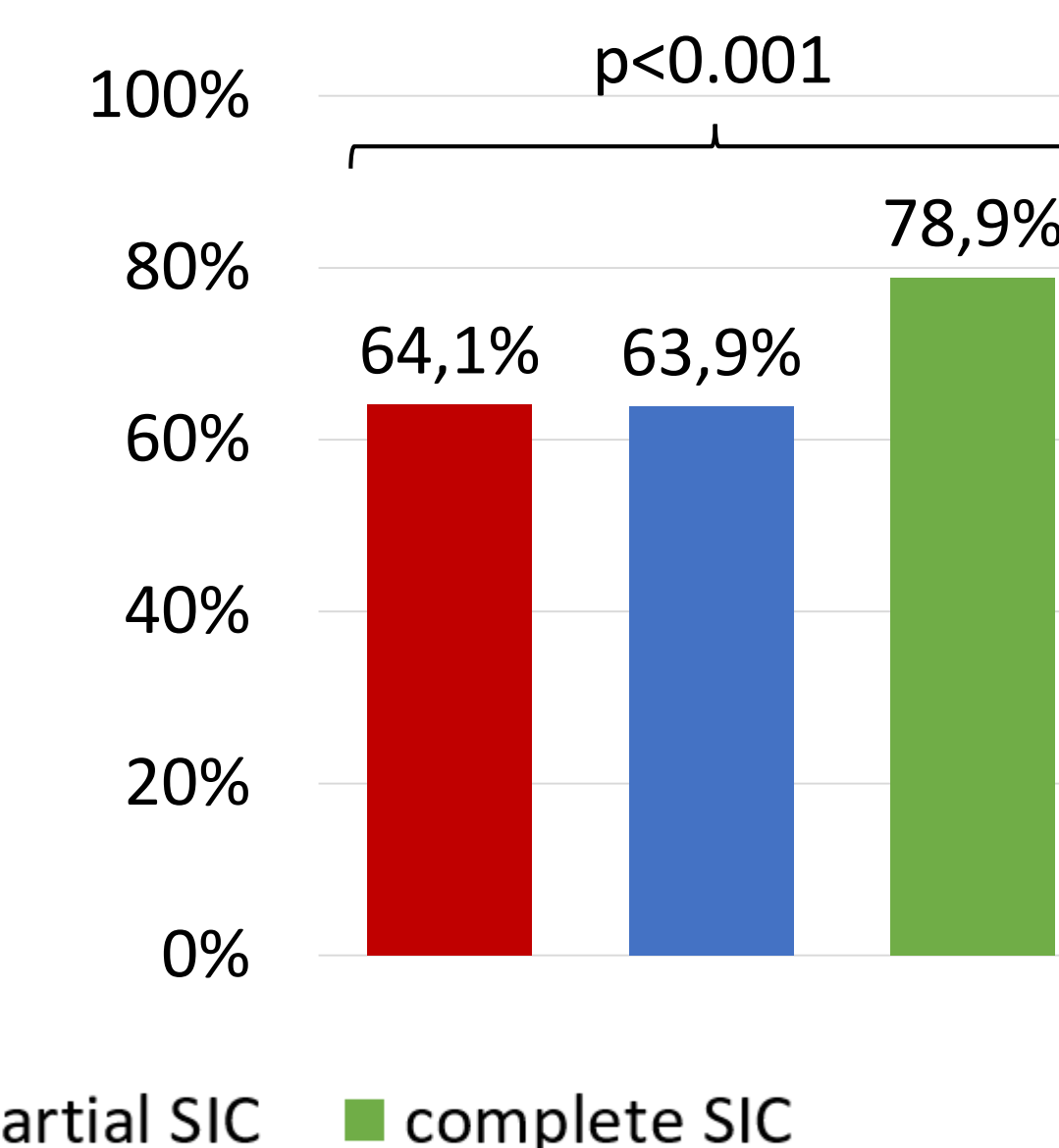
Results



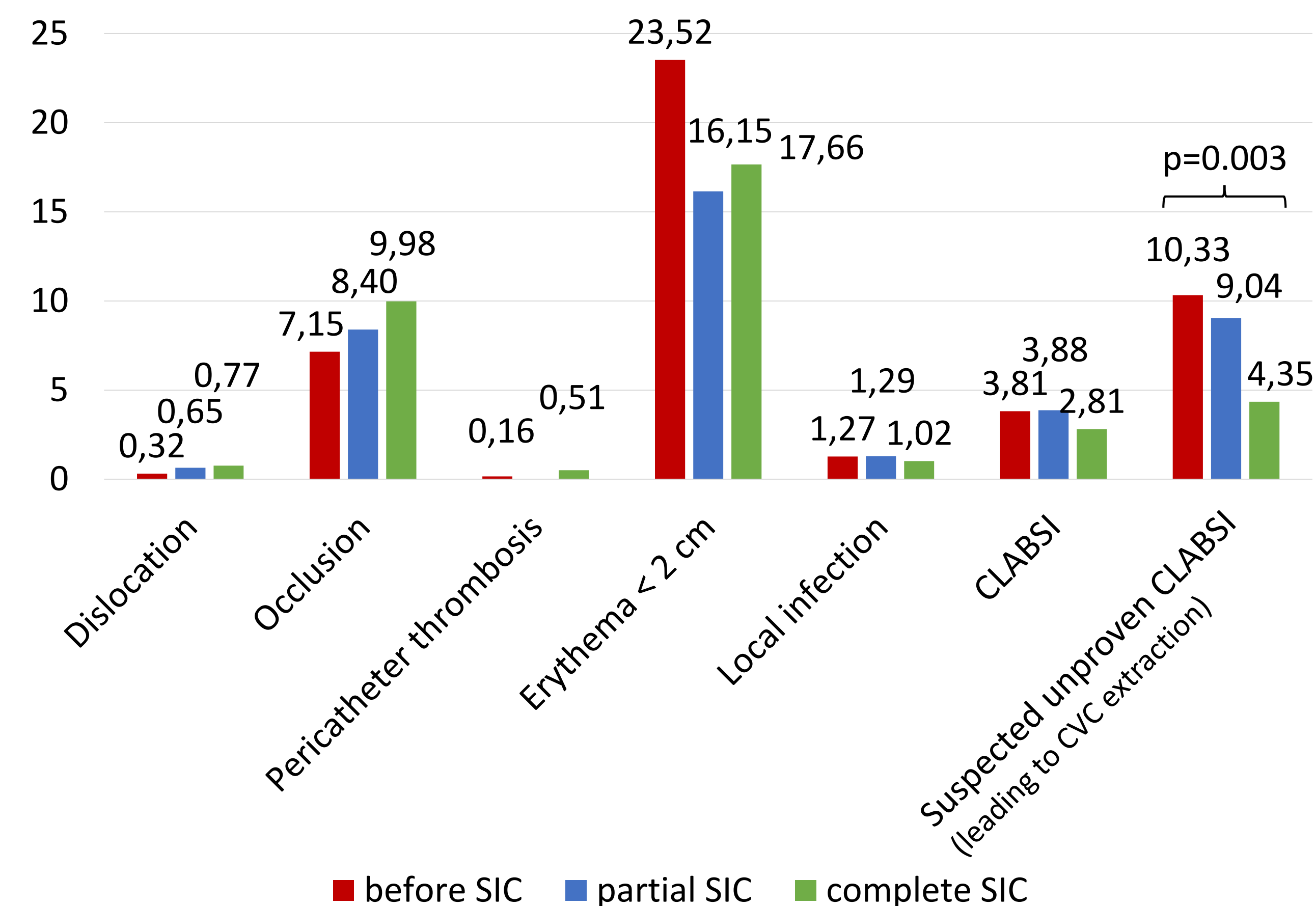
Femoral catheters



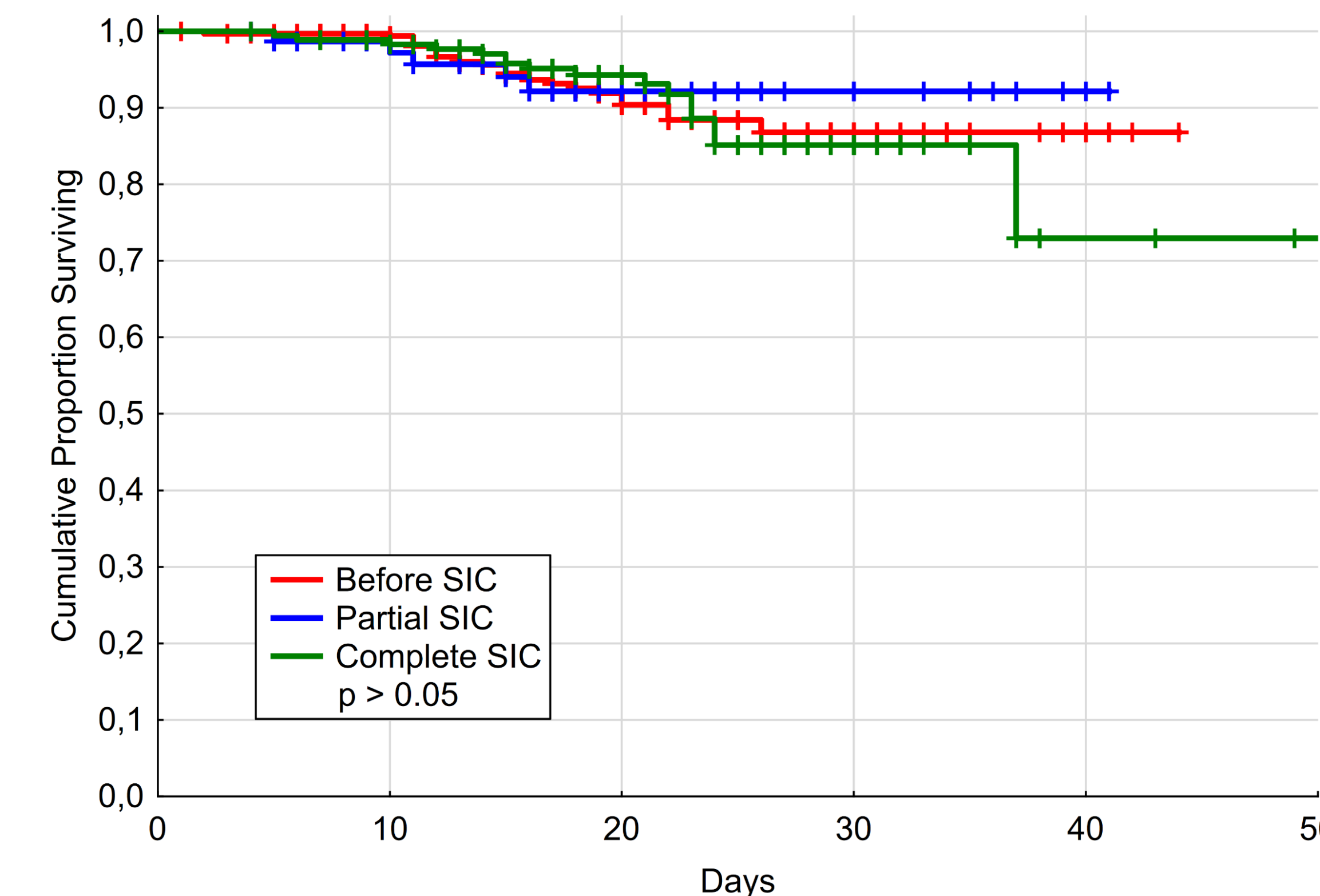
Therapy completion on CVC



Maintenance complications per 1000 catheter-days



Catheter dwell-time without infection



Conclusions

- CVCs inserted according to SIC were burdened with **fewer periprocedural complications** and were extracted less frequently due to complications when compared with CVCs inserted without implemented SIC.
- There were **fewer unsuccessful venipunctures**, postpunction hematomas and **fewer suspected but unproven CLABSI** leading to unnecessary catheter extraction with SIC implementation.
- There was also a statistically nonsignificant **trend towards fewer artery punctures and pneumothoraxes** with SIC implementation.
- Compared to literature, we observed a **slightly higher CLABSI incidence** in this specific immunocompromised population. Nonetheless, there was no difference after SIC implementation.
- In cases when only some steps of SIC were implemented, our results were mostly similar to not using SIC protocol at all.
- However, our data are limited due to relative rarity of these patients and larger sample studies are warranted.

References

Brescia F, et al. J Vasc Access. 2023;24:185-190.

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Contact mrkvova.zuzana@fnbrno.cz

