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Introduction

Peripheral vascular access devices are the most commonly used catheters in clinical practice and the most common procedure performed by nurses. With the evolution of technology, long peripheral catheters have emerged as alternatives, measuring from 6 to 15 cm and lasting up to 29 days. One population of patients with difficult venous access due to multiple hospitalizations and intravenous antibiotic therapy are those with Cystic Fibrosis. Around 70,000 people are diagnosed with the disease worldwide, and it is the most common serious genetic disease of childhood. These patients undergo several hospitalizations, often for periods of less than 6 months, and receive cycles of intravenous antibiotics lasting 10 to 14 days, during which many of them develop infusion phlebitis. Delivering antibiotic therapy to this patient safely and without complications is a challenge. The review was guided by the following research question.

Review question

What evidence do we have to support the use of long peripheral access in the pediatric population diagnosed with cystic fibrosis?.

Objective

To map global evidence on the use of the long peripheral catheter in pediatric patients diagnosed with cystic fibrosis.

Methods

A scoping review was conducted according to the JBI and PRISMA-ScR methodology.

Results

Searched nine databases. A total of 256 patients, age ranged from 3.5 to 32 years, study design 2(20%) cohort 2(20%) prospective single-center 1(10%) prospective randomized 1(10%) case report series 1(10%) controlled study, 1(10%) randomized study. Catheter duration ranged from 8.4 to 14 days. The main antibiotics administered through the long peripheral catheter were piperacillin and tazobactam, ceftazidime and tobramycin.

Figure 1. Flowchart of selection of studies included in the review. Sao Paulo-SP). Brazil, 2023

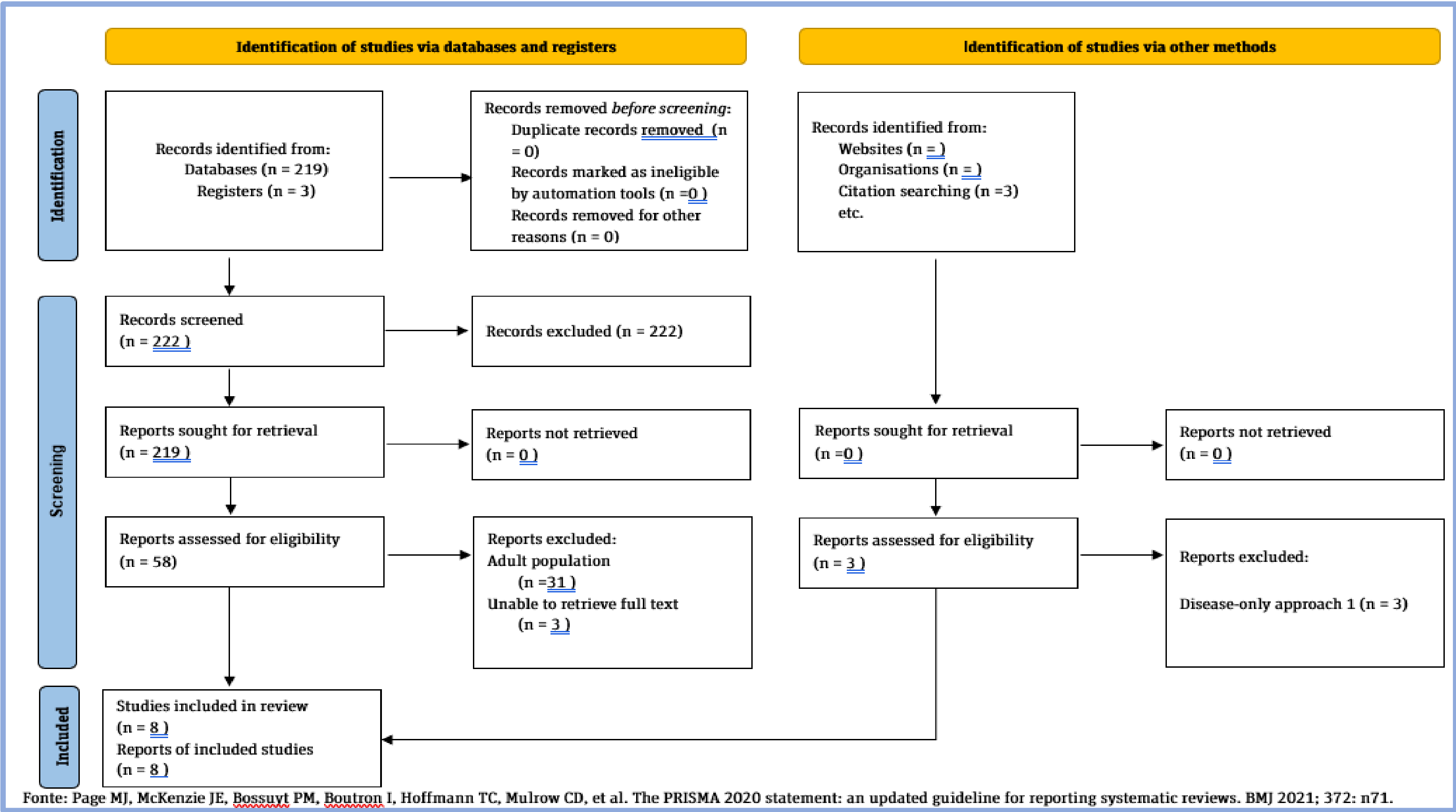


Table 1. Length of catheter stay. São Paulo (SP). Brazil. 2024

Reference	Dwell time (days)			Band	Material
	SPC	LPC	Costs		
Qian SY, al ⁽¹⁷⁾	10,08 (SD = 5,0) dias	-	-	Leaderflex Vygon de 8 cm	Polyurethane 22G
Giardina M et al ⁽¹⁸⁾	14 dias	-	-	Leaderflex Vygon (2-3 Fr) e 8 cm	Polyurethane
Millar-Jones L et al ⁽¹⁹⁾	11,6 (SD = 3·8) dias	-	-	Landmark catheter (Menlo Care, Califórnia)	Aquavene/ Polyurethane
Pradeepkumar VK et al ⁽²²⁾	16,76 (SD=4,44) dias	2,66 (SD = 0,62)	16,21 (SD=4,82) 8,92 (SD = 2,20)	Silastic long line /cateter periférico convencional	22G Aquavene/ Polyurethane
Buck C et al ⁽²¹⁾	14 dias	4 dias	-	Silastic catheters 15 cm, 0.6 mm Aachen, Germany)	Aquavene/ Polyurethane
Harwood IR et al ⁽²⁰⁾	0,2 a 48 dias	-	\$ 48.74 \$ 2.50	midline catheter 22 G Landmark catheter (Menlo Care)	Biomaterial Polyurethane
Williams J et al ⁽²³⁾	8,4 (SD = 4,5) dias	4,0 (SD = 2,1)	-	Silastic catheter (internal diameter 0-3 mm; Dow Corning) 20 and 22g	-Venflon Polyurethane
Glazner J et al ⁽²⁴⁾	(IC 95%) 12 [11,4-12,8] dias	-	-	Seldinger Arterial Catheters (Arrow 22 g 8 cm)	Soft, polyether block amide, Arrow®

LPC: Long Peripheral Catheter, SPC: Short Peripheral Catheter

Figure 2. Main drugs administered by long peripheral catheter. Brazil, 2024

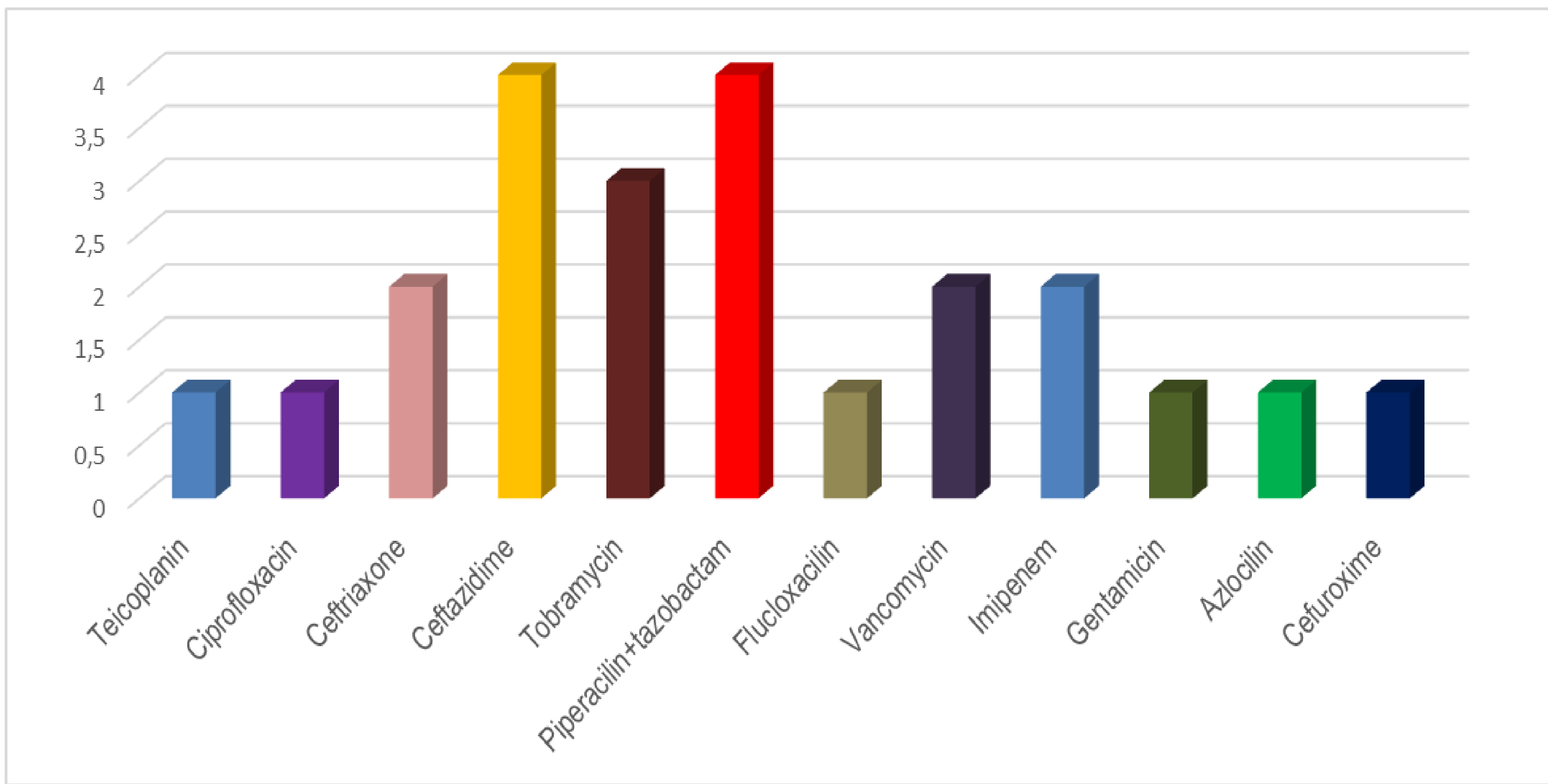
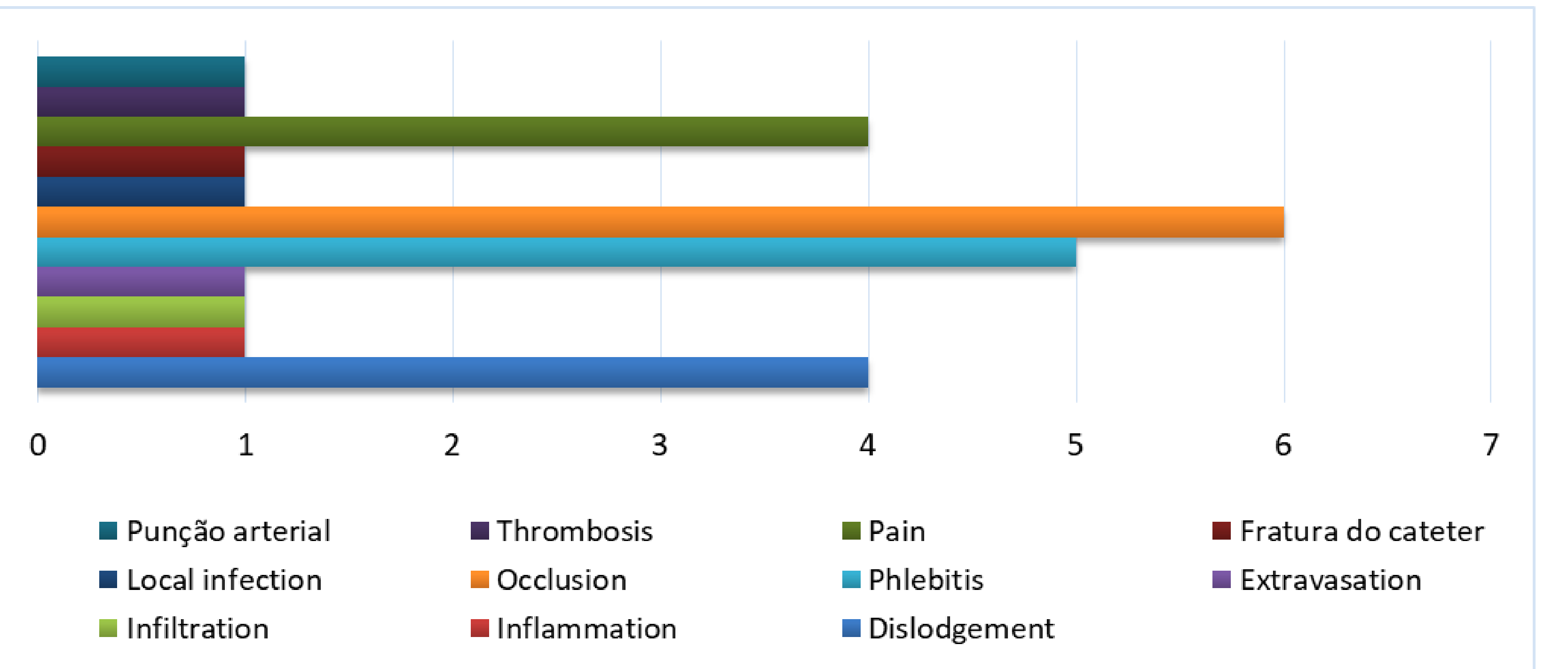


Figura 3. Main complications of the long peripheral catheter. Brazil, 2024



Conclusion

It was possible to identify that the duration of the catheter was very close to the time of prescribed antibiotic therapy, denoting that it is an alternative access for this population.

