

Peripherally Inserted Central Catheters (PICC) in Adult Intestinal Failure Patients Within a Resource Constrained Environment: A Focus on Southern Africa

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BACKGROUND

Peripherally-inserted central lines (PICCs) are safe and effective access routes for total parenteral nutrition (TPN) in intestinal failure (IF) patients, however there is a paucity of data from low resource settings



OBJECTIVES

- Determine PICC insertion success rate
- Need for radiological line position confirmation
- Median PICC lifespan
- Complications in a South African public sector hospital

METHODS

All adult IF patients needing a PICC for TPN between 1st January 2021 – 31st December 2022 (24 months).

Retrospective data analysis from a prospective central venous access registry.

PICC insertions were performed using the Bard-BD Sherlock ECG-magnetic guidance technique

RESULTS

48 patients
38.5 median age
33.3% female
77 PICC placement attempts
89.6% technical insertion success
0 arterial punctures
51% Chest X-rays performed
9 (13,0%) confirming line malposition (7 salvaged - repositioning or used as midline catheter).
16.9 days median lifespan (10.9 - 31.7) days. Max: 127.9 days.

UNIVARIATE ANALYSIS

Patient variable		Suspected CLABSI	%	p-value
Age	< 50 (n=35)	21	60	0.557
	> 50 (n=13)	9	69.2	
Sex	F (n=16)	12	75	0.206
	M (n=32)	18	56.3	
Hypertension	No HPT (n=41)	25	61	0.598
	HPT (n=7)	5	71.4	
Diabetes	No DM (n=45)	28	62.2	0.878
	DM (n=3)	2	66.7	
Chronic lung disease	No CLD (n=45)	29	64.4	0.281
	CLD (n=3)	1	33.3	
HIV	No HIV (n=44)	27	61.4	0.59
	HIV (n=4)	3	75	
Smoker	No (n=43)	27	62.8	0.908
	Yes (n=5)	3	60	
Prior CVC	No (n=9)	3	33.3	0.045
	Yes(n=39)	27	69.2	

RESULTS

Central line associated blood stream infection (CLABSI)

- Suspected in 63.8% (n = 44)
- 50% of these lines were removed within 3 days of CLABSI being suspected
- All confirmed CLABSI cases (n = 28) where successfully treated, except for one case leading to multi-organ failure and death.
- Univariate analyses revealed the only statistically significant factor associated with increased suspected CLABSI was having had a prior central line insertion (69.2% vs 33.3% p = 0.045 OR 4.5)

CONCLUSION

PICCs are safe and effective access routes in resource constrained settings.

Insertion-related morbidity is minimal, only the minority need radiological placement confirmation and with good care of the line, the indwelling lifespan is excellent. As with any central venous line, CLABSI remains the most challenging long-term complication.