Use of PICC in patients with CF in UZ Leuven Belgium

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Introduction

PICCs (Peripherally Inserted Central Catheters) are an effective means of IV access *

PICCs are well tolerated by patients with a high satisfaction for iv drug administration and venous bloodsampling *

In UZ Leuven CF patients prefer PICC insertion over peripheral catheters or TIVAD (Totally Implantable Venous Access Device)

*** Periard et al , J Thrombosis and Haemostasis 2008**

Method

Retrospective evaluation from Feb 2006 - Oct 2011:

1. **Frequency** of PICC insertions
2. **Adverse events** reported by:
   - patients
   - ward nurses
   - intervention-reports hospital catheter team
   - homecare nurse

RESULTS

Frequency

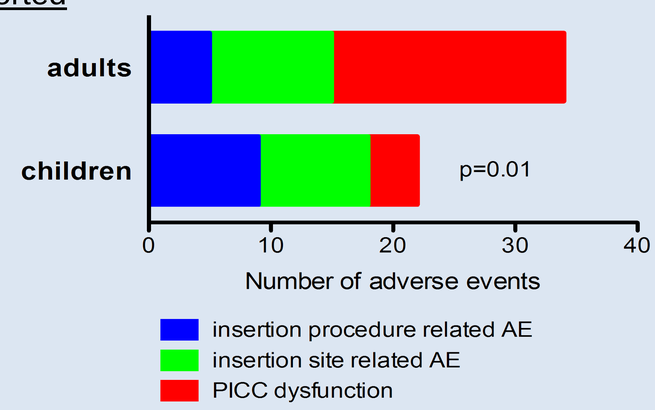
Number of patients	Age Median (min – max)	Number of PICC insertion	In hospital or at home
children n = 23	12 (2 – 18) years	**total : n = 72 median (range): 2 (1 – 11) per patient**	n=51 in hospital (71%) n=21 at home (29%)
adults n = 41	32 (18 – 74) years	**total : n = 178 median (range): 4 (1 – 15) per patient**	n=98 in hospital (60%) n=65 at home (40%)

- all insertions in adults were done with only local anesthetic
- 12/72 PICC insertions in children (17 %) were performed under general anesthetics (combined with bronchoscopy), 18 / 72 (25 %) insertions were done using nitrous oxide
- median duration (min – max) of IV treatment: 12 (1-31) in children and 14 (2-56) in adults

Adverse events reported

	Total # adverse events	# patients with adverse events (gender distribution)	Median # adverse events per patient
children	n = 22	♂ n = 2 ♀ n = 6	2,8
adults	n = 34	♂ n = 8 ♀ n = 8	2,1

Type of AE reported

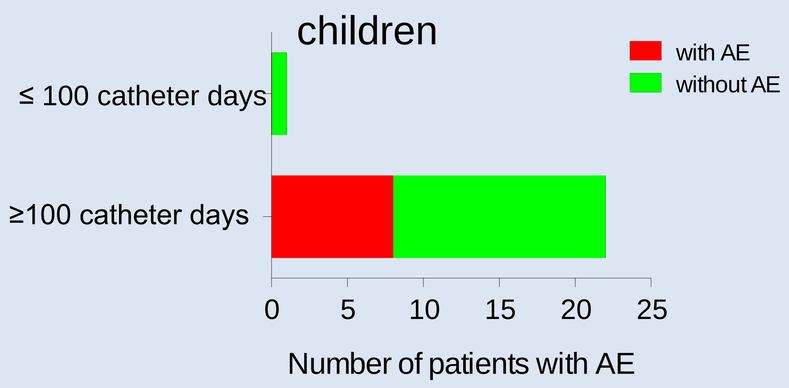


AE reported in children

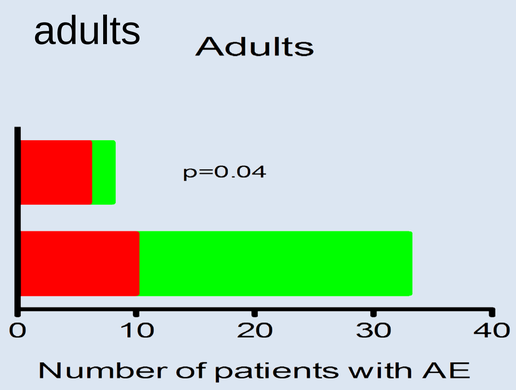
Type of AE	Description	Action taken
problems during PICC insertion	vein stenosis n = 3 (4,1 %)	balloon dilatation vein n = 2 PICC replacement n = 1
	vascular spasm n = 2 (2,7 %)	balloon dilatation vein n = 2
	puncture a brachialis n = 1 (1,8%)	local compression
	vomiting n = 1 (1,8 %)	procedure abrogated
	anxiety n = 2 (2,7%)	procedure abrogated n = 1
insertion site problems	swollen arm n = 2 (2,7%)	ultrasound n = 1 no action taken n = 1
	hematoma n = 1 (1,8 %)	no action taken
	redness n = 3 (4,1 %)	no action taken
	pain insertion site n = 2 (2,7%)	pain reliever n = 2
	phlebitis n = 1 (1,8%)	PICC removal
PICC dysfunction	occlusion n = 3 (4,1 %)	instillation of heparin n = 2 PICC removal n = 1
	leaky catheter n = 1 (1,8 %)	PICC removal

AE reported in adults

Type of AE	Description	Action taken
problems during PICC insertion	vein stenosis n = 4 (2.9%)	balloon dilatation vein (n = 4) PICC replacement (n = 2)
	vein dissection n =1 (0.5%)	PICC replacement
insertion site problems	swollen arm n = 3 (1.7%)	no action taken
	pus at insertion site n = 1 (0.5%)	PICC removal
	redness n = 5 (2.9%)	no action taken
	sensation of bruised arm n = 1 (0.5%)	venography
PICC dysfunction	occlusion n = 11 (6.4%)	urokinase (n = 10) PICC replacement (n = 4)
	deep vein thrombosis n = 1 (0.5%)	LMWheparin PICC replacement
	fever, suspicion of PICC infection n=1 (0.5%)	PICC removal
	accidental removal n = 4 (1.7%)	PICC replacement



29% of AE during IV treatment at home
71% of AE during IV treatment in hospital



40% of AE during IV treatment at home
60% of AE during IV treatment in hospital

Discussion

Overall AE were reported in 20 % of PICC insertions: 32.3 % were mild but required PICC removal in 47 % of adult AE and in 22 % of children AE.

Incidence of AE was similar in children and adults

Incidence of AE increased significantly with increased number of catheter days per patient. For patients with ≥ 100 catheter days AE rate was 75 %.

Significantly more PICC dysfunction was found in adults.