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Introduction PICC ports have become recently, a safe alternative to CICC ports because of the evolution of the related technology, port design, size and new biomaterials that are commercially available now days. CICC ports have been associated with serious procedural complications. PICC port implantation is considered to be a safe and minimally invasive procedure. The aim of our study was to compare the incidence of immediate and late complications between PICC ports and CICC ports using the same insertion procedures.

Method A retrospective analysis of the patients that have received a PICC or a CICC port during a five-year period by the nurse led VA team of a general-oncology hospital was performed. All the procedures were performed by two experienced VAS nurses under real time ultrasound guidance with the method of ECG for tip location, using low profile ports and the same catheter diameter and material in both groups.

Results A total of 542 procedures were performed. A PICC port was placed in 400 patients and a CICC port was placed in 142 patients depending on the available vein diameter, local contraindications and cosmetic results. The comparison between the two patient groups showed no statistically significant differences of the immediate or late complications incidence. The overall complication rate in both groups was quite low. In the PICC port group tunnel or pocket infection incidence was 1.3%, CLABSI 1.8%, CRT 1.3% while there were no CLABSI or CRT complications in the CICC Port group. Both PICC ports and CICC ports had a significant rate of dehiscence up to 5.3% and 2.1% respectively.

Discussion & Conclusion Both port insertion sites and techniques have high success rate and low procedural and catheter related complications. PICC port placement is a well-established low risk procedure with many advantages for specific clinical conditions.

Table 1. Demographic and Clinical Characteristics of the patients (N=542)

Age	60.37 ± 12.56	
Gender	Male	206 (38%)
	Female	336 (62%)
Cancer	Colon	163 (30.1%)
	Breast	94 (17.3%)
	Ovarian & Uterus	53 (9.8%)
	Pancreatic	43 (7.9%)
	Stomach	25 (4.6%)
	other	164 (30.3%)
VAD type	PICC Port	400 (73.8%)
	CICC Port	142 (26.2%)
VEIN	R Basilic/Brachial	248 (45.8%)
	L Basilic/Brachial	116 (21.4%)
	R IJV	120 (22.1%)
	L IJV	25 (4.6%)
Immediate complications	Accidental artery puncture	2 (0.4%)
	Multiple attempts (>2)	1 (0.2%)
	Malposistion	2 (0.4%)
	Fail to advance & change of vein	19 (3.5%)
Late Complications	Tunnel/Pocket infection	7 (1.3%)
	CLABSI	7 (1.3%)
	CRT	5 (0.9%)
	Occlusion	3 (0.6%)
	Dehiscence	24 (4.4%)
	Migration	2 (0.4%)

Table 2. Comparison of complication incidence between PICC Ports and CICC Ports

	PICC Ports	CICC Ports	p
Accidental artery puncture	1 (0.3%)	1 (0.7%)	0.443
Multilpe attempts (>2)	1 (0.3%)	0 (0%)	0.551
Malposition	1 (0.3%)	1 (0.7%)	0.443
Fail to advance & change of vein	11 (2.8%)	8 (5.6%)	0.108
Tunnel/Pocket infection	5 (1.3%)	2 (1.4%)	0.886
CLABSI	7 (1.8%)	0 (0%)	0.113
CRT	5 (1.3%)	0 (0%)	0.181
Occlusion	3 (0.8%)	0 (0%)	0.301
Dehiscence	21 (5.3%)	3 (2.1%)	0.118
Migration	2 (0.5%)	0 (0%)	0.399

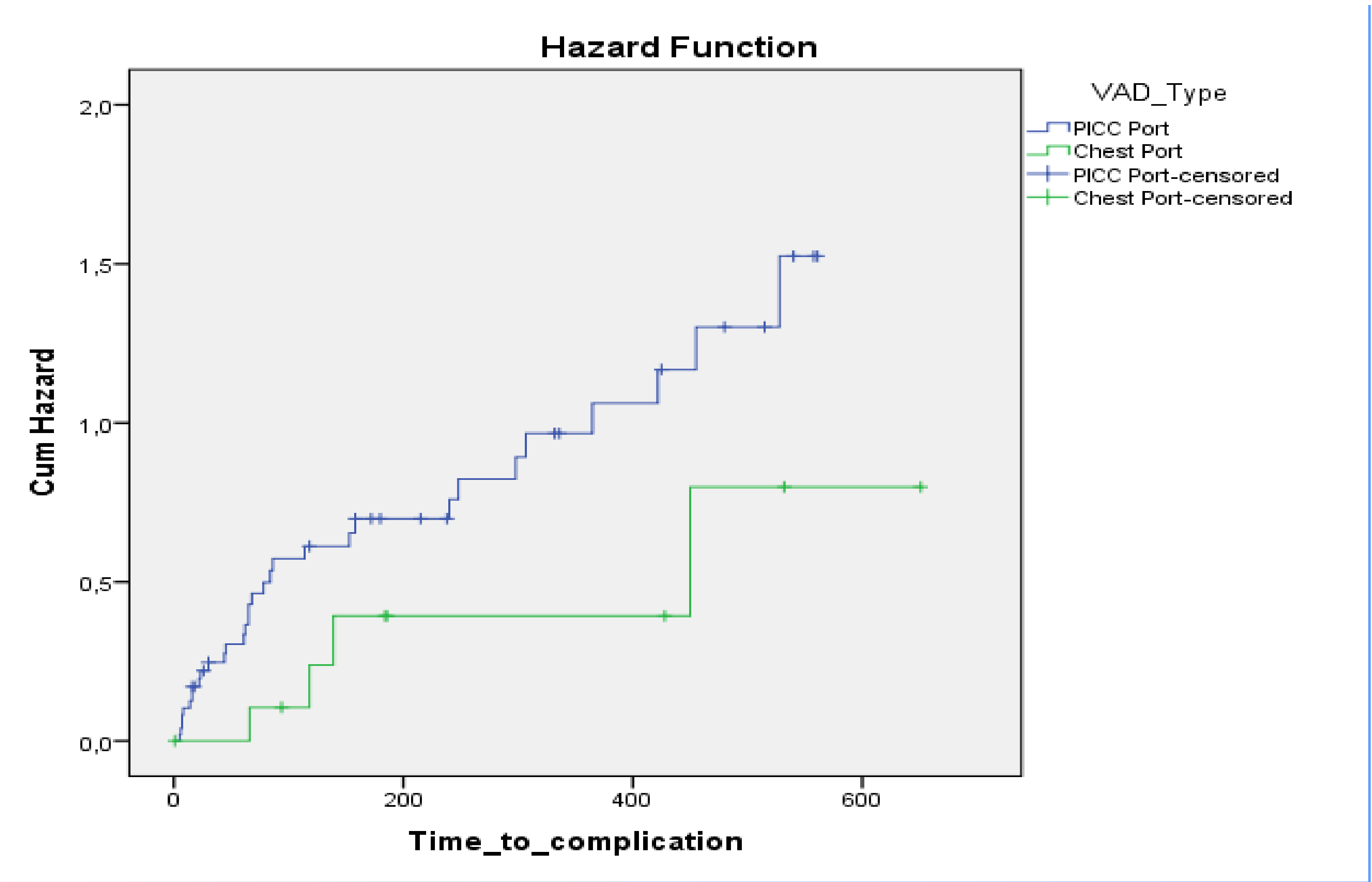


Figure1: Kaplan Meier plot comparing the late complication hazard between PICC Ports and Chest Ports. Log Rank chi square 2.409, p=0.121. Mean time (SE) to complication: PICC Port 278.55 (39.928) days vs Chest Port 429.71 (82.31) days