



Incidence And Risk Factors Of Phlebitis Among Adult Patients With Peripheral Intravenous Catheter.

Daud, A¹., & Mohamad, F²., & Sowtali, S. N³

International Islamic University Malaysia,^{1,2,3}

damia@iium.edu.my¹, fatimah.mohamad91@yahoo.com²,
sitinoorkhairina@iium.edu.my³

Kulliyah of Nursing, Level 2 Annex Building, International Islamic University
Malaysia, 25710 Kuantan, Pahang, Malaysia.



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بُونَيَّبَرَسِيْتِي: اِسْلَامًا اِنْبَارًا نَجْمًا مَلِيْمِيَا

BACKGROUND

- ▶ Peripheral intravenous catheter (PIVC) is the most commonly invasive clinical procedure that performed in hospital worldwide.
- ▶ The insertion of PIVC has become the most common invasive procedure performed to patients in hospital which aims to infuse fluids, administering IV medication, transfuse blood products, and deliver nutrients to patients (Ho & Cheung, 2012; Tee, Siew, Low, & Matizha, 2015)



BACKGROUND

- ▶ However, this procedure usually fails before the end of therapy due to many complications either local or systemic, such as phlebitis, extravasations, infiltration, hematoma, infection and embolism (Wallis et al., 2014). One of the most complications occurred is phlebitis (Abdul-hak & Barros, 2012).
- ▶ These complications can contribute to increase morbidity, increased mortality, and prolonged hospitalization (Kagel 2004).



BACKGROUND

- ▶ The incidence of phlebitis varies from 1.3% to 61.2%.
- ▶ 18.9% phlebitis developed from 952 PIVCs assessed in adults (Gonzales, 2014).
- ▶ In a study conducted in Turkey, 439 catheters inserted in 103 adult patients, the occurrence of phlebitis was 41.2% (Pasalioglu & Kaya, 2014).



WHAT IS PHLEBITIS?

- ▶ Phlebitis is an inflammation at wall of vein with sign and symptoms of pain, erythema, warmth, swelling, along the site of PIVC insertion.
- ▶ Phlebitis may be localized to the insertion site or travel along the vein.
- ▶ Phlebitis may occur during catheterization or up to 48 hours after removal 7.



FACTORS CONTRIBUTING

- ▶ High incidence of phlebitis contributes factors such are; dwell time of PIVC (Abdul-hak & Barros, 2012; Danski, Oliveira, Johann, Pedrolo, & Vayego, 2015; Saini, Agnihotri, Gupta, & Walia, 2011)
- ▶ Anatomy of site of PIVC insertion, place of catheter insertion, such as in emergency department, presence of medication as infusate, gender, type of infusion, presence of chronic disease, and presence of infection (Maria et al., 2016; 2012; Ghorbani, 2007).
- ▶ In Malaysia, there are lack of study regarding phlebitis and its risk factors being identified.



OBJECTIVES

- ▶ To determine the incidence of phlebitis among patients with PIVC
- ▶ To evaluate the significant risk factors associated with incidence of phlebitis among patients with PIVC.



METHODS

Design

- Observational study

Participant

- patients who had PIVC

Setting

- 793 beds hospital
- Hospital Tengku Ampuan Afzan, Kuantan, Pahang
- From September 2016 to January 2017



INSTRUMENTS

Visual Infusion Phlebitis (VIP) score checklist adopted from Royal College of Nursing (2010)

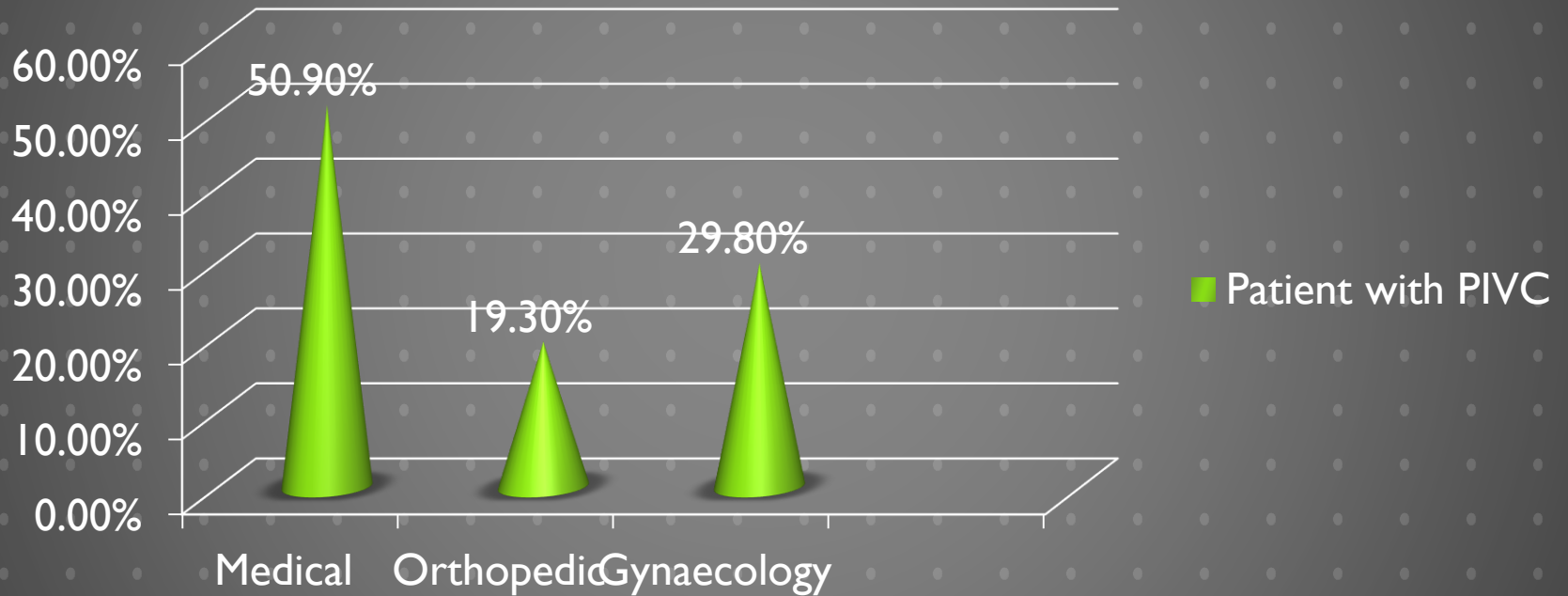
This checklist consists of;

- i. Part A : Sociodemographic data
- ii. Part B : history of phlebitis, time of PIVC insertion, duration of PIVC replacement, site of PIVC, size, type of medication and fluid, type of flushing, presence of chronic disease, place the PIVC inserted, type of dressing plaster, and type of admission.

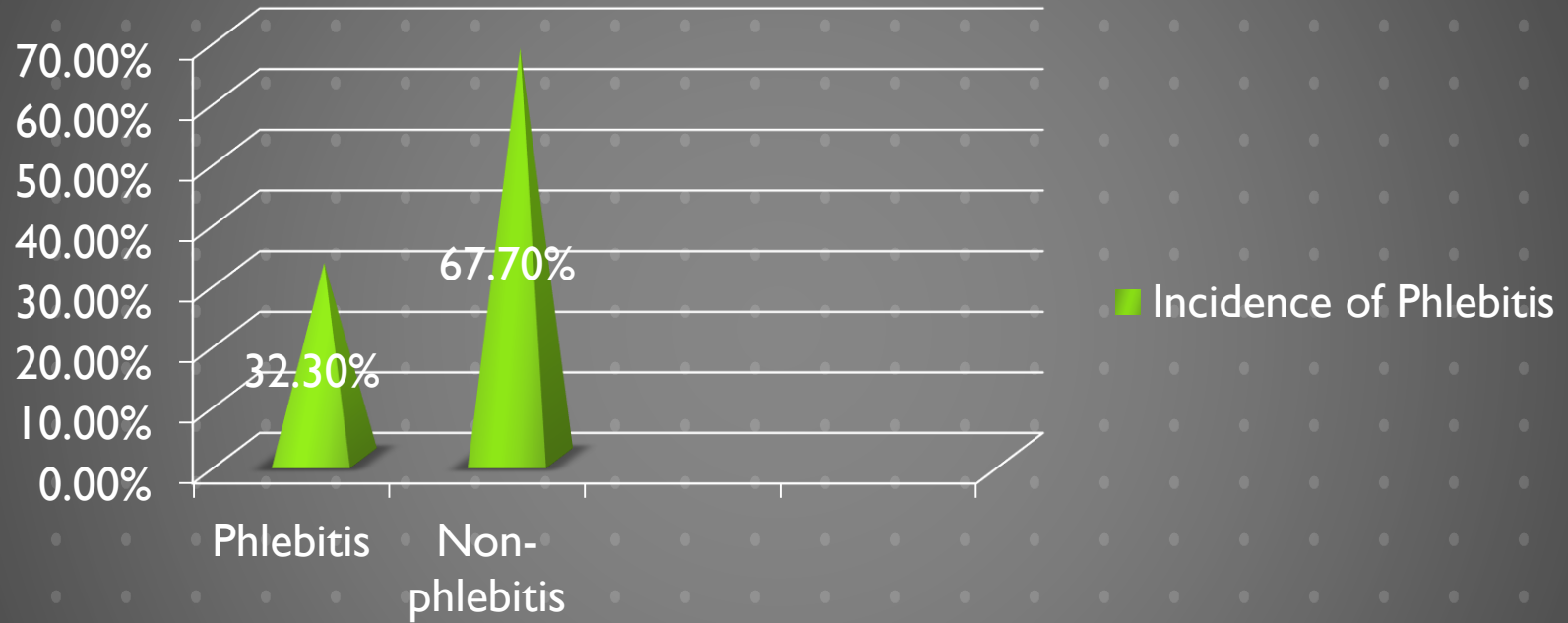


RESULTS

Patient with PIVC



Incidence of Phlebitis



Significant Risk Factors Associated With Incidence Of Phlebitis Among Patients With PIVC.

Characteristic	Frequency		Phlebitis (N=52)				p value
	N	(%)	Yes N	(%)	No N	(%)	
Present of chronic disease							p<0.05
Yes	65	40.4	33	20.5	32	19.9	
No	96	59.6	19	11.8	77	47.8	p<0.05
History of phlebitis							
Yes	30	18.6	16	9.9	14	8.7	
No	90	55.9	17	10.6	73	45.3	p=0.43
Unknown	41	25.5	19	11.8	22	13.7	
Type of IV medication							
Antibiotic	32	19.9	11	6.8	21	13.0	p=0.85
Other medication	40	24.8	12	7.5	28	17.4	
Antibiotic and other medication	57	35.4	22	13.7	35	21.7	
No medication	32	19.9	7	4.3	25	15.5	
Size							p=0.57
14	1	0.6	-	-	1	0.6	
16	3	1.9	1	0.6	2	1.2	
18	73	45.3	26	16.1	47	29.2	
20	79	49.1	23	14.3	56	34.8	
22	5	3.1	2	1.2	3	1.9	
Insertion in							p=0.57
Emergency	99	61.5	30	18.6	69	42.9	
Ward	56	38.4	20	12.4	36	22.4	
Operation theatre	2	1.2	-	-	2	1.2	
Site							
Upper limb	4	2.5	2	1.2	2	1.2	



DISCUSSION

- ▶ The incidence of phlebitis, 32.2% was similar with a study by (Maria et al., 2016) with incidence rate of phlebitis 31.1%.
- ▶ However it is lower than findings in study by Uslusoy & Mete, (2008), 43% and do Rego Furtado, (2011), 54.5%.
- ▶ This variation of incidence of phlebitis, maybe due to different definition of phlebitis from different study, different type of population, and method.



DISCUSSION

- ▶ Presence of chronic disease was associated with incidence of phlebitis with p value < 0.05
- ▶ The presence of chronic disease such as diabetes mellitus and infectious disease gave significant association to the development of phlebitis (Ghorbani, 2007).
- ▶ The result of study by Karina et al., (2014) also gave similar result, which discovered that patients with chronic disease were high chance to get phlebitis statistically.
- ▶ A review by Dychter, Gold, Carson, & Haller (2012) also mentioned that existence of chronic disease such as diabetes mellitus, and hypertension among patients with PIVC associated with occurrence of phlebitis and consequently lead to infection.
- ▶ Patient with history of phlebitis gave significant result on incidence of phlebitis ($p < 0.05$), and this result in agreement with a study by Webster et al., (2008) which found significant association between history of phlebitis and development of phlebitis.



CONCLUSION

- ▶ Overall, phlebitis was the most frequent reason of PIVC removal and complication in this study.
- ▶ This high incidence from the result indicated a worrying outcome, as it is greater than the percentage recommended by INS (2011).
- ▶ This study demonstrated that patients with chronic disease and history of phlebitis were most likely to develop phlebitis.
- ▶ Thus it is suggested that a specific guideline on insertion and care of PIVC to be created for these kinds of patients which may help in reduce more incidence of phlebitis.
- ▶ Moreover, further study within the same scope need to be carried out to provide new data to serve as indicators to assist the achievement of improvements in PIVC care performance.



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Thank You



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