

Phlebitis in Muhammad M. Dunda Hospital, District of Gorontalo, Observational Study

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Abstract: Infusion setting treatment is one of the treatments often performed by nurses to inpatients. One of problems likely to occur in setting infusion is Phlebitis. Phlebitis is an inflammation of a blood vessel for chemical, mechanical and microbe factors. This research aims to describe a phlebitis incident at Dr. MM Dunda Hospital, Gorontalo. Data was collected in January 2017 by the observation of a phlebitis incident. The number of phlebitis incidents in the PICU room is 11 people (200%) in 55 days of infusion setting, and then it is followed by NICU for 7 people (85.3%) in 82 days, Childbed for 11 people (29.3%) in 375 days, VK for 11 people (250%), IGD for 2 people (11.2) in 178 days, ICU for 2 people (11.2%) in 178 days, ICCU for 14 people (106.8%), IMC for 15 people (92.5%) in 162 days, Neuron for 1 person (5.9%), Irina H for 39 people (83.6%), Irina E for 10 people (27.7%), Irina F for 65 people (113.4%) in 573 days, Irina Kid for 1 person (2.9%) in 334 days, Pavilion for 17 people (151.7%) in 112 days. There is an incidence of phlebitis in an inpatient patient and patients infused were not labeled.

1 INTRODUCTION

Treatment of installing infusion is one of the most commonly performed treatments by nurses in an inpatient with the aim of either fluid intake or injecting. One of the problems that may occur when installing infusion is Phlebitis. Phlebitis is an inflammation of the blood vessels resulting from chemical, mechanical and microbial factors. Signs of phlebitis include swelling, redness along the veins, pain, increased temperature in the insertion of the cannula, and functio laesa (function shift). There are several other factors that can cause phlebitis which encompass age, sex, and some disease conditions. Complications of phlebitis can cause infiltration, thrombophlebitis, hematoma and extravasations.

In Indonesia, there is no definite number of phlebitis incidence, and the number of phlebitis cases in 2013, which was based on data from Depkes RI (Department of Health of the Republic of Indonesia), was 50.11% for the Government Hospital while 32.70% for the Private Hospital. The standard of phlebitis incidence applied in Dr MM Dunda Hospital is in accordance with the Service Guidelines and PPI Managerial Guidelines of 2011 is 3 0/00. Dr MM Dunda Hospital is classified to be a

Type B of government hospital with plenary accreditation and is one of the referral hospitals for various other hospitals and surrounding Puskesmas (Public Health Centers) located in the District of Gorontalo. Data obtained from PPI RS Dr. MM Dunda show that the phlebitis incidence rate between January and March, 2016 is relatively high which is 85 0/00 and it is in NICU.

2 METHODS

The research was conducted by doing daily observations and direct surveys for each of inpatients to describe how the prevalence rate (PR) of phlebitis incidence in inpatient patients who were given infusion in January 2017 was so high. An inpatient of Dr. MM Dunda Hospital consists of a PICU room, a NICU room, a Childbed room, a VK room, a IGD room, an ICU room, an ICCU room, an IMC room, a Neuro room, an Irina H room, an Irina E room, an Irina F room, an Irina Kids room and a Pavilion room. The recorded number of phlebitis incidence is any new case by using the formula (incidence rate/number of days for all patients who

were given the infusion). Research population is all inpatient patients at MM Dunda hospital, District of Gorontalo with the following criteria:

- Inpatient patient;
- Patients intra vena line for installed infusion;
- Patients who are treated for more than 1 day.

3 RESULTS

3.1 Sample Characteristics

Research findings are based on the age of respondents and inpatients who are given the infusion.

Table 1: Characteristics of respondents by age.

Age	Frequency	Percentage (%)
≤ 12 years	19	9.17
13- 50 years	133	64.25
>50 years	55	26.57
Total	207	100

Source of primary data

Table 1 shows that the respondents with phlebitis are divided into three, namely 19 respondents at kids age, 133 respondents at adult age and 55 respondents at elderly age.

Table 2: Phlebitis incidence in inpatient.

Room	Incidence	Per mill (‰)
PICU	11	200 ‰ at 55 days of installing the infusion
NICU	7	85.3 ‰ at 82 days of installing the infusion
Nifas	11	29.3 ‰ at 375 days of installing the infusion
VK(RI)	11	250 ‰ at 375 days of installing the infusion
IGD (RI)	2	11.2 ‰ at 178 days of installing the infusion
ICU	2	11.2 ‰ at 178 days of installing the infusion
ICCU	14	106.8 ‰ at 131 days of installing the infusion
IMC	15	92.5 ‰ at 162 days of installing the infusion
Neuron	1	5.9 ‰ at 167 days of installing the infusion
Irina.H	39	83.6 ‰ at 466 days of installing the infusion

Room	Incidence	Per mill (‰)
Irina.E	10	27.7 ‰ at 360 days of installing the infusion
Irina.F	65	113.4 ‰ at 573 days of installing the infusion
Irina. Anak	1	2.9 ‰ at 334 days of installing the infusion
Paviliun	17	151.7 at 112 days of installing the infusion

4 DISCUSSIONS

4.1 Characteristics of Respondents by Age

Based on the data obtained in Table 1, some of the respondents who experienced phlebitis were in the age of adults, namely 133 patients, and also the elderly, namely 55 respondents. These are in accordance with the theory which states that one of the reasons and causes of phlebitis incidence is the factor of age. This is because older age will cause the fragility of blood vessels. A research conducted by Wahyu Rizki (2016) who examined the factor analysis associated with phlebitis incidence in patients who installed an Intravenous Catheter at Ar Bunda Prabumulih Hospital revealed that there was a close relationship between age with incidence of phlebitis with a value of $P = 0.00$. According to the researcher, the installation of infusion in an adult, particularly the elderly demands care in performing caretaking, because the older ages will cause the more fragile blood vessels to burst, thus they require a better handling.

4.2 Phlebitis Incidence in Inpatient

Based on the data obtained from the incidence of phlebitis in MM Dunda Hospital, it is found that the number of incidences which are increasing in the PICU room, the VK room, the ICCU room, the IMC room, the Irina H room, the Irina F room, and the Pavilion room, where the number exceeds the determined target. Based on the researcher's observation and PPI at Dunda Hospital, the phlebitis occurs for several reasons. The first is the labeling of patients when they are about to install and to change infusion. This has not been done by nurses in the room. The number of infusion installation labeling is one of obstacles for nurses in not to label the patients who were installed with infusion. The

infusion installation of patients' changes within 3 X 24 hours, although, as this is not done punctually, thus it causes phlebitis. The nurse also has not performed bandage replacement at infusion after 24 hours. When the patient's label is not yet available, the nurses can modify it by labeling the infusion bandage so that the nurses in the next shift can control the replacement time for the infusion installation. Potter and Perry (2005) state that the attitude of the nurse is crucial in preventing phlebitis. Potter states that one thing that should be considered by the nurse is to replace the infusion bandage at least every 24 hours in the 3x24 hours, and to pay attention to the date and duration of installing the infusion on the third day. Research conducted by Rohani (2015), who examined the duration relationship of infusion installation with phlebitis incidence in Husada Hospital Jakarta, found that there was a close relationship ($P = 0.00$) between the duration of infusion installation (> 72 hours) with the phlebitis incidence in inpatients with infusion installation. According to the researcher, some nurses are not aware of the importance of replacing daily infusion bandages for inpatient patients and replacement of infusion over 3 X 24 hours. Therefore, further socialization about infusion installation treatment in patients and procedures for preparing sterile tools are needed. There is no complaint from patients about phlebitis incidence, thus the nurses tend to replace the infusion in patients based more on the incidental reason, namely only when there is a phlebitis incident, when the infusion will be replaced by the nurses.

Another factor that can cause phlebitis incidence in an inpatient of MM Dunda hospital is nurses' obedience in washing hands (i.e. using the Five moments for Hand Hygiene). Based on the researcher's observation and supervision from PPI of dr MM Dunda hospital, it is found that nurses sometimes ignore the 5 moments hand washing, particularly on items before doing nursing care at installing infusion. In addition, when the nurses have been using latex gloves before installing infuse, sometimes the latex gloves are not sterile, or the nurses are still holding other tools that are not sterile. This kind of behavior is one that can cause phlebitis. Darmawan (2009) states that prevention of phlebitis can be done by washing hands, paying attention to aseptic techniques, giving treatment to areas to be installed by infusion, applying skin antiseptic techniques, and speed and accuracy in giving the infusion fluid. This is in accordance with research conducted by Eliyana (2016), who examined the association of aseptic techniques of

infusion installation with phlebitis incidence in children who received fluid therapy in inpatients of Seurene dr. Zainoel Abidin Hospital, Banda Aceh, and found that there is a close association of aseptic techniques with the phlebitis incidence as shown by $P = 0.00$. According to the researcher, the nurses in the room should pay attention to aseptic techniques before and during installation of the infusion because contamination with germs can occur before and during installation of infusion. The nurses' attitude about five moments in performing nursing treatment should be further enhanced to prevent phlebitis incidence.

5 CONCLUSIONS

If there is an incidence of phlebitis in an inpatient patient, then the labeling of all medical items of the patients who are installed by infusion is required.

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