



## **Prospective Study Effect of Drug Related Problems (DRPs) Reduction of Drug Effects on Pain Patients Remover Ward in Post Surgery Ortopedi Haji Adam Malik General Hospitals in Medan**

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**Abstract:** The research aims to determine whether the finding of Drug Related Problems (DRPs) can cause a reduction in the effects of pain medication. The research was conducted by collecting patient medical records in a postoperative orthopedic inpatient Rindu B3 General Hospital Haji Adam Malik (RSUP H. Adam Malik) prospectively Medan. This research using descriptive method. The results was showed that the criteria are most commonly DRPs on drug selection, namely the selection of drugs in accordance with the indications, but not in accordance with the level of pain that occurs in patients, and this happens in all patients, which is 100.00% (86 patients ). Based on a statistical analysis of the data concluded that the effects of pain medication had no significant association with patient demographic characteristics, namely gender, age, classification of the patient's condition by the American Society of Anesthesiologists (ASA), reason for surgery, and the payment method of treatment ( $p > 0,05$ ). Effects of pain medication also did not have a significant relationship with the criterion DRPs on other issues ( $p > 0,05$ ). Any number of criteria DRPs in each patient, variations in pain medication, DRPs with drug selection criteria, and the criteria DRPs time /interval drug delivery has a significant connection with the effects of pain medication ( $p < 0,05$ ).

**Key words:** DRPs, pain medication, orthopedic surgery, in-patient, Haji Adam Malik General Hospitals.

### **Introduction**

Hospital is a health care institution that organize personal health care in plenary which provides inpatient services, outpatients and emergency department. Hospital pharmacy services is one of the activities in hospitals that support quality health services<sup>1</sup>. The hospital pharmacy services activities includes: assessment prescriptions, dispensing, monitoring and reporting of drug side effect, drug information service, counseling, therapeutic drug monitoring, patient visits, and the assessment of drug usage<sup>2</sup>.

One disease that hospitalized at the general hospital Haji Adam Malik Medan was post surgery ortopedi. There have been many studies done on DRPs against drug use in a variety of cases of the disease, such as open fractures in orthopedic surgery patients. Surgery is an event that affects the human body and implications for the management of pain. According to the International Association for the Study of Pain (IASP), pain is a subjective sensory and emotional unpleasant, obtained as a result of actual or potential tissue damage, or described the condition of the occurrence of such damage<sup>3</sup>.

One of the causes of pain are post-surgical wounds. In postoperative patients feel pain and 75% of patients had a less pleasant experience due to inadequate pain management. These two processes that occur during and after surgery will cause sensitization sensory nervous system<sup>4</sup>.

Based on JCI standards, patients are effectively supported in managing her pain. Pain can be a common thing for the patient, but the pain has not subsided physical and psychological impact of the negative. Patients have the right to obtain the assessment and management, have a process for accessing and managing pain appropriately. To access and manage pain appropriately needed pharmacy services<sup>5</sup>.

Demands of patients and the public about the quality of pharmacy services, requires a change in the service of the old paradigm (drug oriented) to a new paradigm (patient-oriented) with the philosophy of Pharmaceutical Care. Pharmaceutical care (pharmaceutical care) are the responsibility of providing care related to drug therapy with the goal of achieving a defined benefit to improving the quality of life of patients (ASHP, 1993). As is done in pharmaceutical care is to prevent and cope with the occurrence of drug-related problems (Drug Related Problems / DRPs)<sup>6</sup>.

PCNE identify DRPs into several criteria, namely: (a) Reactions Drug Not Desired / ROTD, (b) drug selection, (c) the dose of the drug, (d) the time / interval of drug administration, (f) drug interactions, and (g) other problems<sup>7</sup>.

Based on the above, researchers interested in studying the possible effect of DRPs on reducing the effects of pain medication in postoperative orthopedic patients who are hospitalized in General Hospital Haji Adam Malik Medan.

### **Research method**

The method that used in this research was descriptive method. This study was conducted with a cross-sectional study design prospectively studied DRPs pain medication post-orthopedic surgery patients in hospital H. Adam Malik Medan, using the DRP-V6.2 Registration Form. The results were analyzed statistically using Chi-Square test, SPSS Statistics 17.0.

### **Place and time research**

The study was conducted in the Recovery Room (RR) and the inpatient unit rindu B3 H. Adam Malik Hospital from February 2013 to April, 2013.

### **Research design**

### **Research subject**

The data source is the study of medical records of patients who underwent orthopedic post operative pain medication therapy, the data of SIRS (Hospital Information System), a nurse in the room notes hospitalization, the patient or family interview records of patients directly by following visite medical personnel.

### **Target population**

The population in this study were all post-orthopedic surgery patients treated in the Recovery Room and inpatient unit rindu-B3 H. Adam Malik Hospital Medan, and obtaining pain medication therapy from February 2013 to April, 2013.

The sample in this study were a population that does not meet the criteria for inclusion and exclusion criteria as well as breaking up the test criteria. Inclusion criteria were:

- a. Patients were men and women aged between 18 years to 60 years.
  - b. The patient was conscious.
  - c. Physycal status (PS) of the American Society of Anesthesiologists (ASA-1) and ASA-2
- Exclusion criteria were:

- a. Consuming pain relief before orthopedic surgery at H. Adam Malik Hospital Medan.
- b. Refused to participate.

**Breaking test criteria were:**

Patients experiencing shock and allergy caused not because of pain medication.

**Stage of research**

- a. The study was conducted after obtaining informed consent, approved by the research ethics committee of the Faculty of Medicine, University of Sumatera Utara, and obtain the approval of the director of the Adam Malik Hospital Medan,
- b. Data collection all pain medication given to patients post orthopedic surgery inpatient unit based formulary H. Adam Malik Hospital Medan<sup>8</sup>, a list of pain relievers JAMKESNAS<sup>9</sup>, and DPHO<sup>10</sup>.
- c. Selecting patients who met the inclusion criteria.
- d. Data retrieval.
- e. Analysis of data.

**Results and discussion**

The study was conducted on 86 patients after orthopedic surgery were treated in the Recovery Room (RR) and in Homesick inpatient unit B3 General Hospital Haji Adam Malik Medan.

The results of the study statistically analyzed using SPSS Statistics 17.0. As a test instrument selected Chi - Square for the study variables were measured using a categorical scale of measurement, provided that the expected rate of less than 5 up to 20% of the total cells. If the above conditions are not met used alternative Kolmogorov - Smirnov<sup>11</sup>.

Based on the data it can be seen that there are no post-surgical orthopedic patients studied, free of DRPs. From the above data can also be seen that the criteria DRPs were found in this study only three, namely Drug Selection criteria DRPs, Time / Interval Drug, and Other Issues DRPs criteria. Criteria for Drug Reactions DRPs Not wished / ROTD, Drug Dose, and Drug Interactions Clinically there was no indication in this study. DRPs category drug interactions, although the results of the study found no indication in postoperative orthopedic patients clinically during the study, but according to Lemke (2008)<sup>12</sup>, can theoretically occur interactions between pain relievers that are acidic, in this case ketorolac with other drugs which is alkaline, the anti-infective ceftriaxone, and ranitidine<sup>13</sup>. This can occur if the drugs are potentially interact simultaneously or adjacent given time.

Based on the above data can also be seen, DRPs criteria most widely experienced postoperative orthopedic patients in this study were DRPs Selection criteria Selection of Drugs Under the Drug Indication but not complied with the pain level experienced by the patient, amounting to 100.00% (86 patients). From this number were experiencing higher levels of pain at 23.26% (20 patients), and those with lower pain levels by 76.74% (66 patients). DRPs criteria Matter of Time / Interval Dispensing, based on the above data it appears that DRPs Dispensing Interval inaccuracy experienced by 22.09% of patients (19 patients), and of these, who had Dispensing Interval Time Too Old for 11.63 % (10 patients), and those with Time/ interval Dispensing Brief at 10.47% (9 patients).

Based on the research was known that patients with time/ interval prolonged drug administration due to many reasons, among others, the schedule of pain medication at the turn of the shift medical personnel. This causes the level of pain (VAS) experienced postoperative orthopedic be increased. And based on the research is well known that patients with time/short intervals drug delivery due to pain medication given is not in accordance with the level of pain experienced by the patient, so that the pain medication only give a brief effect, which is not within the drug is supposed to work. This generally occurs in patients smokers and alcoholic.

Other Issues DRPs criteria, based on the above data is the existence of DRPs Drugs Can not Be Given For Restrictions Granting of 3.49 % (3 patients), patients generally Askes. In Askes provisions only bear the pain medication payment ketorolac during two days of treatment (180 mg ketorolac), then continued administration of oral pain relievers. In this case most patients still feel pain because pain medication given orally longer than the effects of pain medication administration parenterally. Another problem found in this study is DRPs criteria Drugs Not Available in Times of Need, there are at 5.81% (5 patients). This happens due to various reasons, including drug ration per day for patients concerned had been discharged because of pain medication administration intervals are short, the displacement means to pay the cost of healthcare, which

originally entered as a public patient, then move on to how to pay for health costs JAMKESNAS or Askes. In the process takes time that could lead to drugs are not available at the time needed.

## Conclusion

Criteria DRPs most common is their choice of drug, namely the selection of drugs as indicated, but not according to the patient's level of pain, occurring in all patients, which is 100.00 % (86 patients). DRPs with the criteria of time / interval of drug administration, occurred in 22.09 % (19 patients); consists of 11.63 % (10 patients), time / interval is too long of drug administration schedule and 10.47 % (9 patients) time / interval is too short of drug administration schedule of drug administration. Criteria DRPs other problems, namely a drug can not be given due to the restrictions of administration, occurred in 3.49 % (3 patients), patients generally Askes, and drugs are not available at the time needed occurred in 5.81% (5 patients).

The presence of DRPs number of criteria in patient call now, variations in pain medication, DRPs on drug selection criteria, and the criteria of DRPs on time/ interval of drug administration, had a significant relationship with the effects of pain medication ( $p < 0.05$ ), the which means a reduction effects of pain medication.

Based on the results of statistical analysis of the data it can be concluded that the patient demographic characteristics: gender, age, ASA, reason for surgery, and how payment of medical expenses, as well as the criteria of DRPs on other issues, does not have a significant relationship with the effects of pain medication ( $p > 0, 05$ ), which means it does not affect the reduction of the effects of pain medication.

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