

Racinality of NSAID Use on Osteoarthritis Patients in the Army Hospital of Pematang Siantar

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ABSTRACT

Rational Use Of Medicine (RUM) or known as Rational Use of Medicine (POR) is a campaign that is spread throughout the world, also in Indonesia. The formulation of the problem in this study is how the rationality of the use of NSAIDs in osteoarthritis patients who seek treatment at the Pematangsiantar Army Hospital. This research was carried out on outpatients at the Pematangsiantar City Army Hospital for the April-June 2021 period. Research data collection was carried out in July-August 2021. Rationality in terms of 5 accuracy (right diagnosis, right indication, right drug, right dose and right patient) then we get the results of the analysis that some of the accuracy is 100% correct, while for the right drug parameter it is still worth 52%. So it can be concluded that treatment for Osteoarthritis patients when viewed from the right diagnosis, right indication, right dose, right patient, right drug, right method of administration at the Pematangsiantar City Army Hospital still cannot be fully said to be rational.

Keywords:

Racinality, NSAID, Osteoarthritis Patients

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1. INTRODUCTION

Clinical features of Osteoarthritis can be seen with signs of persistent knee pain, limited knee stiffness (<30 minutes), decreased joint function, crepitus, limited movement, and bone *enlargement* (NICE Guidelines, 2013). For laboratory tests, there is no diagnostic test for OA, but specific laboratory tests can help determine the underlying disease of secondary OA [31].

IRA recommendations (in 2020) for the management of OA, using a combination of pharmacological and non-pharmacological approaches. The focus of the recommendations is to reduce the risk of OA, early diagnosis of OA and management of OA. This recommendation also produces an algorithm for OA diagnosis approach, an algorithm for assessing the quality of life of patients before starting treatment, pharmacological and non-pharmacological OA management.

Until now there is no therapy that can cure OA. Management is primarily aimed at controlling/reliving pain, improving joint motion and function and improving quality of life. Management of OA of the hip, knee or OA in other places, includes non-pharmacological and pharmacological management. Joint replacement surgery is only performed for patients with severe OA and not responding to therapeutic treatment [29].

NSAIDs/NSAIDs are expected to be anti-rheumatic painkillers if the preparation has been proven to be distributed to the synovium, the onset of NSAID action is immediate (early), the duration of action of NSAIDs is long (long), NSAID active ingredient is not racemic, NSAID active ingredient is not a prodrug, minimal NSAID side effects, provides minimal interaction, a multifactorial mechanism of action.

Based on the results of the [27] the results of the evaluation of the rationality of the use of NSAIDs in outpatient rheumatic osteoarthritis at the Subang Hospital in 2014 there were 30 osteoarthritis patients with 100% correct diagnosis, 100% correct indication, 100% correct dose, 52% correct drug, correct patients 100%, and the right way of administration 52%. According to research conducted by [26], the results of the evaluation of the use of analgesic drugs in osteoarthritis patients in the outpatient installation of RSUD dr. Moewardi Surakarta in 2015 there were 100 patients who showed 100% right indication, 71% right patient, 71% right drug, and 55% right dose. The selection of inappropriate treatment in osteoarthritis patients can trigger toxicity, unwanted effects and reduced effectiveness of these drugs which can reduce the quality of life of osteoarthritis patients and considering that there are still many cases of treatment for osteoarthritis patients in the use of drugs that have not been fully used rationally so that there is a need for monitoring and evaluation of the rationale for the use of osteoarthritis drugs in patients.

Formulation of the problem

Based on the background presented, the formulation of the problem in this study is how the rationality of the use of NSAIDs in osteoarthritis patients who seek treatment at the Pematangsiantar Army Hospital.

1. Drug Rationality

Rational Use Of Medicine (RUM) or known as Rational Use of Medicine (POR) is a campaign that is spread throughout the world, also in Indonesia. Rational medicine is a complex and dynamic process, which is related to components, ranging from diagnosis, selection and determination of drug doses, drug supply and service, drug use instructions, appropriate dosage forms, packaging methods, labeling, and compliance with drug use by consumers. sufferer. The most important component of rational use of drugs is the selection and determination of doses through rational prescribing. Rational prescribing, in addition to increasing the quality of health services, will increase effectiveness and efficiency. Through the right drug, the right dose and the right way of using the disease can be cured more quickly with less risk to the patient [10].

2. Rheumatism

Rheumatism is a person who suffers from rheumatism (gout), arthritis (arthritis). Rheumatic diseases cover a wide range of diseases characterized by a tendency to affect bones, joints, and soft tissues. Rheumatic diseases can be classified into 2 parts, the first is described as connective tissue disease because it affects the supporting framework (*supporting framework*) of the body and its internal organs. Types of diseases that can be classified in this group are osteoarthritis, gout, and fibromyalgia. The second group is known as autoimmune disease because it occurs when the immune system, which normally protects the body from infection and disease, begins to damage healthy body tissues. Types of diseases that can be classified in this group are rheumatoid arthritis, spondyloarthritis, systemic lupus erythematosus and scleroderma.

2. METHOD

1. Type of Research

This research was conducted by collecting secondary data, namely in the form of medical records of patients with osteoarthritis at the Pematangsiantar City Army Hospital for the April-June 2021 period . This research is an observational study based on the patient's medical record, looking back at events that occurred in the past from the patient's medical record for the April-June 2021 period . The design used is *Cross Sectional* , which is the collection of variable data to get an overview of the rationality of using Non-steroidal Anti-Inflammatory Drugs in outpatients. The analysis carried out is descriptive, namely by describing the frequency of indication accuracy, diagnosis accuracy, drug selection accuracy, patient accuracy, dosage regimen accuracy, patient accuracy.

2. Location and Time of Research

This research was carried out on outpatients at the Pematangsiantar City Army Hospital for the April-June 2021 period. Research data collection was carried out in July-August 2021.

3. Population and Research Sample

The population in this study were all adult patients over 36 years old with osteoarthritis who were hospitalized at the Pematangsiantar City Army Hospital for the April - June 2021 period. The sample in this study is a population that meets the inclusion criteria. The sampling technique used is *total sampling*, that is, all patients who meet the criteria are taken as research samples.

3. RESULTS AND DISCUSSION

1. NSAID Rationality Analysis

Proper administration of NSAIDs is very important given the high incidence and the importance of proper management of osteoarthritis and the complications it causes. So osteoarthritis therapy must be done rationally, both pharmacologically and non-pharmacologically. The accuracy of therapy is influenced by the process of diagnosis, selection of therapy, administration of therapy, and evaluation of therapy. Evaluation of drug use is a structured and continuous quality assurance process to ensure that the drugs used are appropriate, safe, and efficient [14].

Drug rationality is an assessment that is in accordance with several aspects of accuracy, including the right indication, right dose, right drug, right patient. Patients can be said to be rational if they meet the evaluation of the accuracy assessment. If one of them is correct, then the patient cannot fulfill the accuracy evaluation. So that the patient can be said to not get osteoarthritis treatment therapy rationally. Patients can be said to have received NSAIDs rationally if they have met the criteria for evaluating the accuracy and none of the NSAIDs given does not meet the evaluation of the accuracy of NSAID administration.

Percentage analysis of accuracy was obtained from the use of NSAIDs with 5 different types of NSAIDs administered to 33 patients. In the diagram, it can be seen that the highest accuracy rate is found in the accuracy of

the dose, the indication and the right patient, the right way of administration is 100%. While for the right drug, the percentage is 52%. This shows that there are many inaccuracies in the administration of therapy to Osteoarthritis patients, this is because currently the use of Diclofenac Sodium which has been recommended for doctors by the POM RI will limit the dose and contraindications to diclofenac products related to cardiovascular risk, with attachment letter No: SV.03.01.343.3.07.15.4239. This is because diclofenac sodium will cause systemic effects at high doses and in the long term. So with a circular from the POM Agency, the use of diclofenac sodium can be categorized as inappropriate, and the treatment therapy does not follow the stages of therapeutic treatment that have been recommended by the Indonesian Rheumatoid Association by not giving Acetaminophen at the beginning of therapy.

2. Correct Diagnosis

Correct diagnosis is the accuracy of the diagnosis of the disease suffered by the patient. In this study, the measurement of diagnosis is based on what is listed in the patient's medical record. Because the diagnosis is made by a doctor who provides therapy. Based on Appendix 2, the accuracy of the diagnosis of osteoarthritis treatment at the Pematangsiantar City Army Hospital can be seen in table 1.

Table 1 Correct Diagnosis

	N	Percent (%)
Appropriate	33	100
Not exactly	0	0

There is a 100% correct number of NSAIDs with indications. The accuracy of the NSAID diagnosis for patients listed in the medical record is based on the results of the NSAID diagnosis given according to the patient's condition.

3. Precise Indication

Appropriate indication is the accuracy of the use of NSAIDs on the basis of the established diagnosis, in accordance with the diagnosis listed in the medical record. The diagnosis of OA can be made through 5 stages, namely: history taking, physical examination, approaches to rule out other disease diagnoses, investigations, special attention to clinical symptoms and factors that influence the choice of therapy/management of OA. The accuracy of the indications can be seen in table 2.

Table 2 Exact Indication

	N	Percent (%)
Appropriate	33	100
Not exactly	0	0

There is a 100% correct number of NSAIDs with indications. The accuracy of NSAID indications to patients occurs when the NSAIDs given are in accordance with the indications of the patient's condition and are compared with the Guidebook for Diagnosis and Management of Osteoarthritis issued by the IRA. The results of the analysis can be seen in appendix 3.

4. Right Dosage

Dosage is one of the things that is considered in the assessment of accuracy. The dose given must be in accordance with the patient's condition, and the dose that has been determined in the IRA's Guide to Diagnosis and Management of Osteoarthritis. The accuracy of the dose can be seen in table 3.

Table 3 Correct Dosage

	N	Percent (%)
Appropriate	33	100
Not exactly	0	0

The results of the analysis of the assessment of the accuracy of the NSAID dose based on the number of NSAIDs given to the patient, there were 100% of NSAIDs that had the correct dose. The patient's dose accuracy assessment is based on the dose regimen given. All outpatient Osteoarthritis patients at the Pematangsiantar City Army Hospital have received doses that are in accordance with the IRA and the Hospital Formulary. Assessment of the accuracy of NSAID dosage can be seen in Appendix 4.

5. Right Patient

Appropriate patient is the administration of NSAIDs must be adjusted to the circumstances of each patient. The accuracy of the patient can be seen from the suitability of the patient's condition. Based on Appendix 5, it was found that 100% of patients were given the right NSAID. The results of the analysis of patient accuracy assessment can be seen in table 4.

Table 4 Right Patient

	N	Percent (%)
Appropriate	33	100
Not exactly	0	0

6. Appropriate Drug

Drug accuracy is the suitability of selecting a drug among several types of drugs that have indications for Osteoarthritis that have been determined by the IRA and adjusted to the patient's medical history that has been used previously. Based on IRA recommendations, it is stated that:

- a. For Osteoarthritis with mild to moderate symptoms, medication can be given the following, if absent or contraindicated with gift the drug:
 - Acetaminophen (not enough from 4 grams a day).
 - Drug Anti-inflammatory non-steroids
- b. For Osteoarthritis with mild to moderate symptoms who experience risk to the digestive system (for patients aged >60 years, accompanied by comorbid disease with polypharmacy, history of peptic ulcer, history of gastrointestinal bleeding, taking corticosteroid drugs and/or anticoagulants), one drug can be given the following:
 - Acetaminophen (not enough from 4 grams per day).
 - Drug anti inflammation non-steroids (NSAID) topical
 - Non-selective non-steroidal anti-inflammatory drugs (NSAIDs), with administration of drug gastric protector (*gastro- protective agents*).

Drug anti inflammation non-steroids (NSAID) must started with The analgesic dose is low and can be increased to the maximum dose only if the response at low doses is less effective. Gradual release of NSAIDs (eg Na-Diclofenac SR75 or SR100) should be considered to improve patient comfort and compliance. The use of misoprostol or proton pump inhibitors is recommended in patients with risk factors for upper gastrointestinal bleeding or with gastrointestinal ulcers. (*Level of Evidence* : I, and II)

1. Cyclooxygenase-2 inhibitors. (*Level of Evidence* : II).

These drugs should be regularly administered to patients with impaired liver function, and should be avoided in chronic alcoholic patients. Patients who do not respond to acetaminophen are not allowed to receive systemic therapy or can be given topical capsaicin or methylsalicylate cream.

- c. For moderate to severe pain and associated joint swelling, aspiration and intra-articular injection of a glucocorticoid (eg triamcinolone hexatone 40 mg) for short-term pain management (one to three weeks) may be given, in addition to oral nonsteroidal anti-inflammatory drugs (NSAIDs). .
- d. Based on the recommendation from the POM on limiting and monitoring the dose of diclofenac sodium due to its side effects on cardiovascular risk, its use is categorized as inappropriate.

If the initial therapy does not show adequate results / response, alternative therapies can be carried out as follows:

- a. In patients with moderate to severe pain, and who have a history of contraindications to specific COX-2 inhibitors and NSAIDs, Tramadol (200-300 mg in divided doses) may be given. Its benefit in the control of moderate to severe OA pain, however, is limited by the side effects of nausea (30%), constipation (23%), dizziness (20%), somnolence (18%) and vomiting (13%).
- b. Intra-articular therapy such as administration of hyaluronan (Levels of Evidence: I and II) or short course of corticosteroids (one to three weeks) in knee OA. (*Level of Evidence* : II)
- c. Combination:
- d. Meta-analysis proves:
- e. The benefits of the paracetamol-codeine combination increase the effectiveness of analgesics by up to 5% compared to paracetamol alone, but the side effects are more common: more based on clinical experience. Clinical research evidence shows this combination is effective for non-cancer related pain.

Table 5 Right Drugs

	N	Percent (%)
Not exactly	16	48
Appropriate	17	52
Total	33	100

From these descriptive results, it was found that 52% of patients were categorized as right drug, with NSAIDs given and according to treatment history. Likewise, the results of the analysis with the formulary of the Pematangsiantar City Army Hospital. In some cases the treatment of OA does not follow the stages of pharmacological therapy, even in some cases the drug is given directly for patient indications that should be for patients with moderate to severe pain levels. Drug accuracy can be seen in appendix 6.

7. Evaluation Analysis Rationality

The rationale evaluation analysis is carried out by paying attention to the evaluation of the results of the correct diagnosis, the right indication, the right drug, the right dose, the right patient. These five aspects of accuracy must be able to provide an exact value until the end of the evaluation is declared completely correct. So in terms of the right diagnosis, right indication, right drug, right dose and right patient, it can be concluded that NSAID administration has been declared rational if it has been stated correctly in each of the five aspects of each NSAID administration to patients. In the example case number 5 dated 24/05/2021, giving diclofenac Na is at risk for cardiovascular disease, so it is declared that the drug is not right and there are several drug therapies that are given directly with diclofenac Na and do not follow the guidelines for Osteoarthritis treatment therapy even though the other criteria have been met. according to the accuracy of both that issued by the Hospital formulary and the IRA.

4. CONCLUSION

Rationality in terms of 5 accuracy (right diagnosis, right indication, right drug, right dose and right patient) then we get the results of the analysis that some of the accuracy is 100% correct, while for the right drug parameter it is still worth 52%. So it can be concluded that treatment for Osteoarthritis patients when viewed from the right diagnosis, right indication, right dose, right patient, right drug, right method of administration at the Pematangsiantar City Army Hospital still cannot be fully said to be rational.

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