
Case Study Of Unstable Angina Pectoris (UAP) Post Percutaneous Transluminal Coronary Angioplasty (PTCA) With Controlled Hypertension Comorbidity, Dyspepsia Syndrome, And Stage 1 Acute Kidney Injury (AKI) In Patients In The Heart Ward

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Abstract

This case study aimed to evaluate the appropriateness of pharmacotherapy, identify potential Drug Related Problems (DRPs), and provide rational therapy recommendations for a patient with UAP post PTCA 1 stent, controlled hypertension, dyspepsia syndrome, and Acute Kidney Injury (AKI) stage 1 dd acute on Chronic Kidney Disease (CKD). A descriptive method with a case study design was applied to a 53-year-old male patient hospitalised in the Cardiac Ward of RSUP Dr. M. Djamil Padang. Data were collected prospectively through interviews, clinical observation, and medical record review, then evaluated based on the right indication, right patient, right drug, and right dose criteria and compared with clinical guidelines. The results showed that the therapy, comprising antiplatelet, anticoagulant, statin, nitrate, antihypertensive, gastrointestinal, and supportive agents, was generally appropriate. However, several potential DRPs were identified, namely lower-than-reference doses of enoxaparin, ranitidine, and lactulose, as well as pharmacodynamic interactions among acetosal, clopidogrel, and enoxaparin that increase bleeding risk. During follow-up, the patient's clinical condition and renal function improved, indicated by a decrease in creatinine from 1.5 to 1.1 mg/dL and urea from 28 to 15 mg/dL. Pharmacist involvement in medication review is essential to optimise therapeutic effectiveness and safety.

Keywords: *Acute Kidney Injury; Drug Related Problems; Hypertension; Pharmacotherapy; Unstable Angina Pectoris*

INTRODUCTION

Cardiovascular disease is still one of the leading causes of death and disability worldwide. One of the manifestations of cardiovascular disease that requires immediate treatment is Acute Coronary Syndrome (KA), which includes Unstable Angina Pectoris (UAP), Non-ST Elevation Myocardial Infarction (NSTEMI), and ST-Elevation Myocardial Infarction (STEMI). Unstable Angina Pectoris is an acute myocardial ischemic condition due to decreased coronary blood flow without myocardial necrosis. If not treated quickly and appropriately, UAP can develop into a myocardial infarction that increases the risk of morbidity and mortality (PERKI, 2024).

The management of UAP aims to reduce myocardial ischemia, prevent thrombus formation, avoid myocardial infarction, and reduce mortality. The therapies provided generally include antiplatelets, anticoagulants, antiischemic drugs, statins, as well as revascularization measures such as Percutaneous Transluminal Coronary Angioplasty (PTCA) in patients who meet the indications. After undergoing PTCA, patients still need optimal drug therapy to prevent restenosis, stench thrombosis, and recurrent cardiovascular events (PERKI, 2024).

The success of therapy in post-PTCA patients is influenced by the presence of comorbidities that can worsen clinical conditions. Hypertension is one of the main risk factors for coronary heart disease that must be optimally controlled to reduce the risk of cardiovascular complications (Unger et al., 2020). In addition, the long-term use of

antiplatelets and other drugs can increase the risk of gastrointestinal disorders, such as dyspepsia syndrome, so appropriate gastroprotective therapy is needed.

Kidney function disorders in the form of Acute Kidney Injury (AKI) and Chronic Kidney Disease (CKD) are also often found in patients with cardiovascular disease. Decreased kidney function can affect the elimination of various drugs, increase the risk of toxicity, and require dose adjustments according to kidney function. Therefore, monitoring laboratory parameters and evaluating therapy regimens is an important part of efforts to achieve treatment success while preventing unwanted complications (DiPiro et al., 2023).

The complexity of clinical conditions and the use of various types of drugs in patients with post-PTCA UAP diagnosis, controlled hypertension, dyspepsia syndrome, and AKI stage 1 dd acute on CKD have the potential to increase the occurrence of Drug Related Problems (DRPs), such as inaccuracies in indications, drug selection, dosage, drug interactions, and the need for additional therapies (PERNEFRI, 2023). Therefore, therapeutic evaluation by clinical pharmacists is needed to ensure that the therapy provided is in accordance with clinical guidelines, effective, safe, and able to improve patient clinical outcomes. Based on this, this case study was conducted to evaluate the suitability of therapy, identify potential DRPs, and provide rational pharmacotherapy recommendations in accordance with the patient's clinical condition (PERKI, 2018).

RESEARCH METHODS

This study used a descriptive method with a case study design on patients undergoing treatment at the Heart Ward of Dr. M. Djamil Padang Hospital. The subject of the study was one 53-year-old male patient with a diagnosis of Unstable Angina Pectoris (UAP) post PTCA 1 stent, controlled hypertension, dyspepsia syndrome, and Acute Kidney Injury (AKI) stage 1 dd acute on Chronic Kidney Disease (CKD), which was determined purposively based on suitability with the objectives of the case study. The instruments used are data collection sheets, patient medical records, and pharmacotherapy evaluation guidelines including criteria for the right indication, the right patient, the right drug, and the right dose with comparative literature such as the PERKI guidelines, DiPiro Pharmacotherapy, drugs.com, and Medscape.

Data were collected prospectively during treatment through patient interviews, observation of clinical conditions, and tracing of medical records, including subjective data, vital signs, physical examinations, laboratory results, diagnosis, and pharmacological therapy. Monitoring was carried out periodically by recording the development of clinical conditions and changes in therapy, then evaluation of drug rationality and identification of potential and actual DRPs, including problems of drug selection, dosage, side effects, drug interactions, and therapeutic needs. The results of the evaluation were compared with relevant literature and therapy guidelines, then analyzed descriptively and presented in the form of narratives and tables to describe the clinical condition, therapy regimen, monitoring results, drug-related problems, and recommendations given.

RESULTS AND DISCUSSION

Table 1. Patient Identity

No. RM	01.17.xx.xx
Name	Mr. A
Age	53 Years
Weight	72 kg
Height	163 cm
Gender	Male
Rooms	Atrium Bed 739
Entry Date	29 May 2026
Return Date	June 4, 2026
Doctor	dr. Muhammad Fakhri, Sp.JP

Table 1 shows that the patient is a 53-year-old male who is being treated in the Atrium Bed 739 room under the supervision of a cardiologist and blood vessel specialist. This identity data is an important basis for therapeutic evaluation because the patient's age, weight, and height also affect the calculation of drug doses, especially in anticoagulant therapy whose adjustment depends on the patient's weight and kidney function.

Table 2. Anamnesa

Components	Remarks
Main Complaints	Chest pain since 10 hours of SMRS
Current Disease History	Chest pain since 10 hours of SMRS; cold sweat (-), nausea (-), vomiting (-), shortness of breath (-), palpitations (-), dizziness (-). The referral patient from Sawahlunto Hospital with an anteroseptal STEMI diagnosis and has received a loading of aspirin of 160 mg, loading of clopidogrel 300 mg, and an injection of lansoprazole of 30 mg.
History of Past Illness	Hypertension
Family History of Illness	None
History of Drug Use	Amlodipin 5 mg
History of allergies	None

Based on Table 2, the patient's main complaint is chest pain that is typical for myocardial ischemic symptoms, accompanied by a history of hypertension as the main risk factor for coronary heart disease. The patient has received initial dual antiplatelet therapy and gastric protection since the referring hospital. The absence of a history of allergies is an important consideration in assessing the patient's suitability to all medications given during treatment.

Table 3. Patient Vital Signs Examination Data

Clinic Data	Normal Values	Units	29/5	30/5	31/5	1/6	2/6	3/6	4/6
Temperature	36–37	°C	36,5	36,5	36,5	36,6	36,6	36,6	36,5
Nadi	60–100	x/min	88	70	79	81	79	79	79
Breathing	18–20	x/min	20	20	20	20	20	20	20
Blood Pressure	120/80	mmHg	134/82	135/85	130/85	120/76	128/67	118/67	128/72

Table 3 shows that the patient's vital signs were generally in the normal and stable range during treatment. Temperature, pulse, and respiratory rate were consistent within

normal limits, while blood pressure tended to be controlled with a systolic range of 118–135 mmHg and diastolic 67–85 mmHg. This controlled blood pressure condition demonstrated the effectiveness of amlodipin therapy as an antihypertensive, while supporting the diagnosis of controlled hypertension in patients.

Physical Examination

Table 4. Laboratory Examination Data

Data Laboratory	Normal Values	Units	Preliminary Results (29/5)	Reproduction
Hemoglobin	13–16	g/dL	12,3	-
Leukosit	5–10	10 ³ /mm ³	12,9	-
Erythrocyte	4,5–5,5	10 ⁶ /μL	4,21	-
Thrombositis	150–400	10 ³ /mm ³	299	-
Hematocrit	40–48	%	37	-
RDW-CV	11,5–14,5	%	17,4	-
Blood Urea	10–50	mg/dL	28	15 (3/6)
Blood Creatinine	0,8–1,3	mg/dL	1,5	1,1 (3/6)
Blood Glucose During	70–200	mg/dL	176	-
Sodium	136–145	mmol/L	136	-
Potassium	3,5–5,1	mmol/L	3,6	-
Klorida	97–111	mmol/L	104	-
Troponin I	2–100	ng/L	27	-
Gout	3–7	mg/dL	7,9 (2/6)	-
Kolesterol Total	<200	mg/dL	248 (2/6)	-
Kolesterol HDL	40–60	mg/dL	20 (2/6)	-
Kolesterol LDL	<100	mg/dL	178 (2/6)	-
Trigliseride	<150	mg/dL	249 (2/6)	-

Based on Table 4, there are several laboratory parameters that are outside normal values. Initial creatinine levels of 1.5 mg/dL and leukocytes of 12.9 10³/mm³ indicate impaired renal function and inflammatory processes, while lipid profiles show dyslipidemia with total cholesterol of 248 mg/dL, LDL of 178 mg/dL, low HDL of 20 mg/dL, and triglycerides of 249 mg/dL. An increase in uric acid to 7.9 mg/dL accompanies complaints of knee pain. During monitoring, renal function improved, which was marked by a decrease in creatinine to 1.1 mg/dL and urea from 28 to 15 mg/dL, thus supporting the diagnosis of stage 1 acute AKI on CKD which showed improvement.

Diagnosis

Based on the results of the anamnesis, physical examination, and supporting examinations, the patient is diagnosed with Unstable Angina Pectoris (UAP) post PTCA 1, controlled hypertension, dyspepsia syndrome, and Acute Kidney Injury (AKI) stage 1 dd acute on Chronic Kidney Disease (CKD). This diagnosis is the basis for determining the pharmacological therapy regimen given to the patient during treatment.

Table 5. Implementation

No	Drug Name	Dosage Regimen
1	NaCl 0,9% 500 mL	1x1 IV
2	Asetosal tab 80 mg	1x1 oral
3	Clopidogrel tab 75 mg	1x1 oral
4	Atorvastatin tab 20 mg	1x2 oral

No	Drug Name	Dosage Regimen
5	Gliseril trinitrate caps 2.5 mg	2x1 oral
6	Amlodipin tab 5 mg	1x1 oral
7	Raniddin Inch 25 m/mL	2x1 IV
8	Lactulosa cheese 3.335 g/5 mL	1x2 oral
9	Sucalfat suspensi 500 mg/5 mL	3x2 oral
10	Folic acid tab 5 mg	1x1 oral
11	Sodium bicarbonate tab 500 mg	3x1 oral
12	Enoksaparin sodium inj 60 mg/0,6 mL	2x1 sc
13	Kolkisin tab 500 mcg	1x1 oral

Table 5 presents the therapeutic regimen that the patient received during treatment, which includes fluid therapy, dual antiplatelets (acetosale and clopidogrel), anticoagulants (enoxaparin), statins (atorvastatin), antiischemia (glyceryl trinitrate), antihypertensive (amlodipine), gastrointestinal therapy (ranitidine, sucalfate, lactulose), as well as supportive therapy for renal disorders (sodium bicarbonate, folic acid) and colchicine for gout complaints. This combination of therapies illustrates a comprehensive treatment approach to the patient's entire clinical problem.

Table 6. Home Remedies

No	Drug Name	Dosage Regimen
1	Klopidogrel tab 75 mg	1x1 oral
2	Acetosal 80 mg	1x1 oral
3	Kolkisin tab 500 mcg	1x1 oral
4	Paracetamol 500 mg	3x1,5 oral
5	Ranitidin kaps 30 mg	2x1 oral
6	Lansoprazole 150 mg	1x1 oral

Table 6 shows the medication given when the patient discharges, focusing on post-treatment maintenance therapy. Persistent dual antiplatelet therapy to prevent recurrent cardiovascular events and thrombosis stent, accompanied by colchicine for gout complaints, paracetamol as an analgesic, and ranitidine and lansoprazole as gastric protectors. The administration of this homecoming drug aims to maintain the effectiveness of therapy while preventing recurrence after the patient leaves the hospital.

Table 7. Drug Review (Date of Drug Administration)

No	Drug Name	Regimen	Get Started	29/5	30/5	31/5	1/6	2/6	3/6	4/6
1	NaCl 0,9% 500 mL	1x1 IV	29/5	√						
2	Asetosal tab 80 mg	1x1 oral	30/5		√	√	√	√	√	√
3	Clopidogrel tab 75 mg	1x1 oral	30/5		√	√	√	√	√	√
4	Atorvastatin tab 20 mg	1x2 oral	30/5		√	√	√	√	√	√
5	Gliseril trinitrate 2.5 mg	2x1 oral	30/5		√	√	√	√	√	√
6	Amlodipin tab 5 mg	1x1 oral	30/5		√	√	√	√	√	√
7	Raniddin Inch 25 m/mL	2x1 IV	30/5		√	√	√	√	√	√
8	Lactulosa cheese 3.335 g/5 mL	1x2 oral	30/5		√	√	√	√	√	√
9	Sucalfat susp 500 mg/5 mL	3x3 oral	30/5		√	√	√	√	√	√
10	Folic acid tab 5 mg	1x1 oral	30/5		√	√	√	√	√	√

No	Drug Name	Regimen	Get Started	29/5	30/5	31/5	1/6	2/6	3/6	4/6
11	Sodium bicarbonate 500 mg	3x1 oral	30/5		√	√	√	√	√	√
12	Enoksaparin 60 mg/0,6 mL	2x1 sc	30/5		√	√	√	√		
13	Kolkisin tab 500 mcg	1x1 oral	30/5	√	√	√	√	√	√	√

Table 7 illustrates the pattern and duration of administration of the drug during treatment. Most of the main therapies such as double antiplatelet, atorvastatin, glyceryl trinitrate, amlodipine, and gastrointestinal therapy were administered consistently from May 30 to June 4, 2026. Enoksaparin was administered only for four days (May 30–June 2) as per the duration of anticoagulant therapy in the acute phase, while colchicine was started earlier as gout complaints appeared. This pattern of administration indicates therapeutic adjustment to the development of the patient's clinical condition.

Table 8. Patient Monitoring (Follow-Up)

Date	S (Subjective)	A (Assessment) / Interaksi	P (Plan)
30 May 2026	Shortness of breath	Acetosal–clopidogrel and acetosal–lovenox increase the risk of bleeding	Monitoring the effects of therapy, KU, TTV, and bleeding signs
May 31, 2026	Chest pain decreases, tightness decreases	Acetosal–clopidogrel and acetosal–lovenox increase the risk of bleeding	Monitoring the effects of therapy, KU, TTV, and bleeding signs
June 1, 2026	Chest pain disappears, tightness decreases	Acetosal–clopidogrel and acetosal–lovenox increase the risk of bleeding	Monitoring the effects of therapy, KU, TTV, and bleeding signs
June 2, 2026	Chest pain disappears	Acetosal–clopidogrel and acetosal–lovenox increase the risk of bleeding	Monitoring the effects of therapy, KU, TTV, and bleeding signs
June 3, 2026	Chest pain disappears, shortness of breath is absent	Acetosal–clopidogrel increases the risk of bleeding	Monitoring the effects of therapy, KU, TTV, and bleeding signs
June 4, 2026	Chest pain disappears, shortness of breath is absent, knee pain	Acetosal–clopidogrel increases the risk of bleeding	Monitoring the effects of therapy, KU, TTV, and bleeding signs

Based on Table 8, the patient's clinical condition showed a gradual improvement during monitoring. The complaints of shortness of breath that appeared on May 30 gradually decreased and disappeared on June 3, while chest pain turned into disappearing arises. On June 4, new complaints appeared in the form of knee pain related to increased uric acid. Throughout the monitoring, pharmacists consistently identified potential drug interactions in the form of increased risk of bleeding due to the combination of antiplatelets and anticoagulants, so the monitoring plan was focused on the effectiveness of therapy, vital signs, and signs of bleeding.

Table 9. Precise Analysis of Indications

Drug Name	Indikasi	Remarks
NaCl 0.9% 500 mL	Fluid therapy to maintain fluid and electrolyte balance (DiPiro et al., 2023).	Exact Indications
Asetosal tab 80 mg	Prevents heart attacks, strokes, and chest pain (drugs.com).	Exact Indications
Clopidogrel tab 75 mg	Lowers the risk of stroke and blood clots after a heart attack (drugs.com).	Exact Indications
Atorvastatin tab 20 mg	Treats high cholesterol and reduces the risk of heart attack, stroke, and angina (drugs.com).	Exact Indications
Gliseril trinitrate 2.5 mg	Prevents chest pain (angina pectoris) (drugs.com).	Exact Indications
Amlodipin tab 5 mg	Treating angina and other conditions due to coronary artery disease (drugs.com).	Exact Indications
Raniddin Inch 25 m/mL	Treats and prevents stomach and intestinal ulcers (drugs.com).	Exact Indications
Lactulosa cheese 3.335 g/5 mL	Treating constipation (drugs.com).	Exact Indications
Sucralfat susp 500 mg/5 mL	Treats active duodenal ulcers (drugs.com).	Exact Indications
Folic acid tab 5 mg	Reduces homocysteine levels and treats megaloblastic anemia due to folate deficiency (drugs.com).	Exact Indications
Sodium bicarbonate 500 mg	Treatment of metabolic acidosis in kidney disease (drugs.com).	Exact Indications
Enoksaparin 60 mg/0,6 mL	Prevents the formation of blood clots (drugs.com).	Exact Indications
Kolkisin 500 mcg	Cope with acute attacks of gout and prevent recurrent attacks (drugs.com).	Exact Indications

Table 9 shows that all medications given to patients are as indicated. Each drug has indications that are aligned with the patient's diagnosis, ranging from antiplatelets and anticoagulants for post-PTCA UAP conditions, statins for dyslipidemia, amlodipine for hypertension, gastrointestinal therapy for dyspepsia syndrome, to supportive therapy for kidney disorders and colchicin for gout. The suitability of these indications indicates that the selection of therapy has taken into account all the clinical problems experienced by the patient.

Table 10. Precise Analysis of the Patient

Drug Name	Contraindications	Remarks
NaCl 0.9% 500 mL	There is no history of hypersensitivity to NaCl.	Right Patient
Asetosal tab 80 mg	There is no history of hypersensitivity to acetosal.	Right Patient
Clopidogrel tab 75 mg	There is no history of clopidogrel allergy and no active bleeding.	Right Patient
Atorvastatin tab 20 mg	There is no hypersensitivity and no acute liver failure (cirrhosis).	Right Patient
Gliseril trinitrate 2.5 mg	There is no history of hypersensitivity of glyceryl trinitrate.	Right Patient

Drug Name	Contraindications	Remarks
Amlodipin tab 5 mg	There is no history of hypersensitivity to amlodipine.	Right Patient
Raniddin Inch 25 m/mL	There is no history of hypersensitivity to ranitidine.	Right Patient
Lactulosa cheese 3.335 g/5 mL	There is no history of hypersensitivity to lactulose.	Right Patient
Sucralfat susp 500 mg/5 mL	There is no history of hypersensitivity to sucralfate.	Right Patient
Folic acid tab 5 mg	There is no history of hypersensitivity to folic acid.	Right Patient
Sodium bicarbonate 500 mg	Not taking diuretics that cause hypochloremic alkalosis.	Right Patient
Enoksaparin 60 mg/0,6 mL	There is no active heavy bleeding and hypersensitivity.	Right Patient
Kolkisin 500 mcg	There is no hypersensitivity or severe kidney/liver disorders that increase the risk of toxicity.	Right Patient

Based on Table 10, all drugs are considered appropriate for the patient because no contraindications or history of allergy to the drugs given are found. However, special attention is still needed in the use of colchicine and enoxaparin considering that patients have impaired renal function, so that drug elimination can be disrupted and potentially increase the risk of toxicity and bleeding if not monitored closely.

Table 11. Precise Analysis of Drugs

Drug Name	Reasons for Drug Selection	Remarks
NaCl 0.9% 500 mL	Maintain the balance of body fluids.	Right Medication
Asetosal tab 80 mg	Antiplatelets to prevent blood clots.	Right Medication
Clopidogrel tab 75 mg	Antiplatelets to prevent blood clots.	Right Medication
Atorvastatin tab 20 mg	Lowers cholesterol levels and the risk of heart disease.	Right Medication
Gliseril trinitrate 2.5 mg	Reduces chest pain.	Right Medication
Amlodipin tab 5 mg	Control blood pressure.	Right Medication
Raniddin Inch 25 m/mL	Lowers stomach acid secretion to treat dyspepsia.	Right Medication
Lactulosa cheese 3.335 g/5 mL	Overcoming constipation.	Right Medication
Sucralfat susp 500 mg/5 mL	Protects the gastric mucosa.	Right Medication
Folic acid tab 5 mg	Lowers homocysteine levels in impaired kidney function.	Right Medication
Sodium bicarbonate 500 mg	Overcoming metabolic acidosis in impaired kidney function.	Right Medication

Drug Name	Reasons for Drug Selection	Remarks
Enoksaparin 60 mg/0,6 mL	Anticoagulants to prevent thrombus in UAP patients.	Right Medication
Kolkisin 500 mcg	Reduces inflammation and pain due to uric acid crystals in the joints.	Right Medication

Table 11 shows that the selection of all drugs was appropriate according to the mechanism of action and the objectives of each therapy. A combination of double antiplatelets and anticoagulants was chosen to prevent thrombosis in post-PTCA UAP conditions, statins to stabilize atherosclerosis plaques, and gastrointestinal and supportive therapies to manage patient comorbidities. This rational drug selection is in line with evidence-based treatment principles in the management of acute coronary syndrome with comorbidities.

Table 12. Precise Dosage Analysis

Drug Name	Dosage of Administration	Therapeutic Dosage	Remarks
NaCl 0.9% 500 mL	1x1 (500 mL) 40 cc/jam	The adult sodium-chloride requirement is met with NaCl 0.9% 1 L/day (drugs.com).	Proper Dosage
Asetosal tab 80 mg	1x1 (80 mg)	75–100 mg/day (drugs.com).	Proper Dosage
Clopidogrel tab 75 mg	1x1 (75 mg)	75 mg 1x/day (drugs.com).	Proper Dosage
Atorvastatin tab 20 mg	1x2 (40 mg)	10–80 mg 1x/day (drugs.com).	Proper Dosage
Gliseril trinitrate 2.5 mg	2x1 (5 mg)	2.5–6 mg 2–4x/brush; max 26 mg (drugs.com).	Proper Dosage
Amlodipin tab 5 mg	1x1 (5 mg)	5–10 mg 1x/day (drugs.com).	Proper Dosage
Raniddin Inch 25 m/mL	2x1 (50 mg IV/12 hours = 100 mg/day)	50 mg every 6–8 hours (drugs.com).	DRP (lower dose)
Lactulosa cheese 3.335 g/5 mL	1x2 (10 cc)	15 mL 1x/day (drugs.com).	DRP (lower dose)
Sucralfat susp 500 mg/5 mL	3x2 (30 mL/day = 3000 mg)	1 g PO every 6 hours; maintenance 1 g/12 hours on an empty stomach (Medscape).	Proper Dosage
Folic acid tab 5 mg	1x1 (5 mg)	5 mg 1x/day (drugs.com).	Proper Dosage
Sodium bicarbonate 500 mg	3x1 (1500 mg)	325–2000 mg 1–4x/day (drugs.com).	Proper Dosage
Enoksaparin 60 mg/0,6 mL	2x1 (60 mg = 120 mg/day)	1 mg/kgBB 2x/day (drugs.com).	DRP (lower dose)
Kolkisin 500 mcg	1x1 (0.5 mg)	1.2 mg/day (drugs.com).	Proper Dosage

Based on Table 12, most drug doses have been in accordance with the recommended therapeutic dose range. However, three potential dose-related DRPs, namely enoxaparin, ranitidine, and lactulose were identified that were rated lower than the comparison dose. In patients weighing 72 kg, the dose of enoxaparin ideally adjusts to body weight and renal function, while the dose of lactulose and ranitidine can be re-evaluated based on clinical

response. However, dose adjustment still needs to take into account the patient's renal function impairment condition in order for therapy to remain safe and effective.

Table 13. Identification of Drug Related Problems (DRPs)

Category: DRP	Results	Explanation
Drug therapy is not required	No	All therapies are as medically indicated and there is no duplication of therapy or additional therapy that is not needed.
Non-pharmacologist therapists	Yes	Patients can still undergo non-pharmacological therapy in the form of healthy diet management, fat and salt restriction, physical activity according to conditions, and avoiding foods that trigger dyspepsia.
Medication errors	No	The form of the preparation is precise, there are no contraindications, and all drugs are indicated for the patient's condition.
Improper dosage	Yes	There are lower doses of enochsaparin, ranitidine, and lactulose compared to the comparative doses, so evaluation is needed.
Adverse drug reactions/interactions	Yes	There were acetosal–clopidogrel and enoksaparin–acetate pharmacodynamic interactions that increased the risk of bleeding; pharmacokinetic interactions of amlodipine–clopidogrel that decreased the effectiveness of clopidogrel through CYP3A4 inhibition; and amlodipine–glyceryl trinitrate interactions that increased the effect of hypotension.
Patient compliance	No	All medications are available, patients receive medication, families understand instructions, and patients comply with therapy.
Need additional therapy	No	The patient has received therapy as needed and does not require additional prophylactic therapy.

Table 13 summarizes the results of DRP identification in patients. Of the seven categories evaluated, three main problems were identified, namely the potential for optimized non-pharmacological therapy, lower doses of enochsaparin, ranitidine, and lactulose, and drug interactions that increase the risk of bleeding and hypotension. The pharmacodynamic interactions between acetosal, clopidogrel, and enoksaparin are of major concern because they have the potential to cause bleeding, so strict monitoring of bleeding signs and blood pressure during therapy is required.

Table 14. Monitoring Drug Side Effects

Drug Name	Manifestation of Side Effects	How to Overcome
NaCl 0.9% 500 mL	Hipernatremia, overload cairan	Monitor sodium levels and signs of excess fluid.
Asetosal tab 80 mg	Stomach pain, nausea, vomiting, bleeding	Given after meals, monitor for signs of bleeding, consider gastric protectors.
Clopidogrel tab 75 mg	Increased risk of bleeding, bruising, itching	Monitor bleeding, stop when bleeding is heavy.
Atorvastatin tab 20 mg	Headaches, muscle and joint pain	Monitor liver function and muscle pain complaints.

Drug Name	Manifestation of Side Effects	How to Overcome
Gliseril trinitrate 2.5 mg	Headache, dizziness, hypotension	Monitor blood pressure and recommend slow position changes.
Amlodipin tab 5 mg	Peripheral edema, headache, dizziness, fatigue	Monitor blood pressure and leg swelling.
Raniddin Inch 25 m/mL	Headache, diarrhea, constipation, nausea	Monitor gastrointestinal complaints and hypersensitivity.
Lactulosa cheese 3.335 g/5 mL	Diarrhea, bloating, abdominal cramps, electrolyte disorders	Adjust dosage, monitor bowel frequency and hydration.
Sucralfat susp 500 mg/5 mL	Constipation, dry mouth, nausea	Encourage drinking enough and consuming fibrous foods.
Folic acid tab 5 mg	Nausea, bloating, allergic reactions (rarely)	Administered as per dosage and monitor allergic reactions.
Sodium bicarbonate 500 mg	Bloating, hypernatremia, fluid retention	Monitor acid-base balance and electrolyte levels.
Enoksaparin 60 mg/0,6 mL	Bleeding, headache, dizziness	Monitor for signs of bleeding, avoid other medications that increase the risk of bleeding.
Kolkisin 500 mcg	Nausea, vomiting, diarrhea, abdominal pain	Reduce the dose or stop if the side effects are severe, consult a doctor.

Table 14 presents the potential side effects of the drug and its treatment strategies. The most important side effects to watch out for are the increased risk of bleeding due to the use of antiplatelets and anticoagulants, as well as the risk of hypotension due to the combination of glyceryl trinitrate and amlodipine. In addition, gastrointestinal disorders, peripheral edema, and electrolyte disorders are also of concern. Monitoring of these side effects is important to keep therapy safe, as well as allowing early intervention if adverse drug reactions occur in patients.

Evaluation of Post-PTCA UAP Therapy

53-year-old patient Mr. A was treated with a diagnosis Unstable Angina Pectoris (UAP) post PTCA 1 stent, controlled hypertension, dyspepsia syndrome, and Acute Kidney Injury (AKI) stage 1 dd acute on Chronic Kidney Disease (CKD). In post-PTCA UAP conditions, the main goal of therapy is to prevent thrombosis and recurrent cardiovascular events, reduce myocardial ischemia, and control cardiovascular risk factors (PERKI, 2024). Patients receive dual antiplatelet therapy in the form of acetosal 80 mg and clopidogrel 75 mg once a day which play a role in inhibiting platelet aggregation and preventing the formation of post-installation thrombus stent.

Patients also received enoxaparin 60 mg subcutaneously twice daily (120 mg/day) as an anticoagulant to prevent the formation and expansion of thrombus, with a therapeutic dose of 1 mg/kgBB every 12 hours. Atorvastatin therapy 40 mg/day was administered as a lipid-lowering and prevention of secondary cardiovascular events as it can lower LDL levels and stabilize atherosclerosis plaques (DiPiro et al., 2023). To manage chest pain, patients received glyceryl trinitrate 2.5 mg twice daily which works through vasodilation to lower preload and myocardial oxygen requirements. During monitoring, chest pain still

disappeared but was no longer accompanied by shortness of breath on June 3 and 4, 2026, indicating a partial improvement in the patient's clinical condition.

Evaluation of Hypertension, Dyspepsia, and Kidney Disorders Therapy

To control hypertension, patients receive amlodipine 5 mg once a day, a calcium channel blocker dihydropyridine group that works through arterial vasodilation to lower peripheral resistance and blood pressure (Unger et al., 2020). The use of amlodipin is considered appropriate because hypertension is recorded to be controlled and no history of hypersensitivity is found, although blood pressure still needs to be monitored to prevent hypotension considering that patients also get nitrates. Complaints of dyspepsia syndrome are treated with ranitidine 50 mg intravenously every 12 hours and suspended sucralfate, which functions to reduce gastric acid secretion and protect the gastric mucosa. However, based on dose evaluation, the use of ranitidine and lactulose is included in DRP because the dose is lower than the comparison dose.

Lactulose is given to treat constipation, which is important in post-PTCA UAP patients because straining during bowel movements can increase cardiovascular load. In conditions of impaired renal function, patients receive 500 mg of sodium bicarbonate three times a day to overcome metabolic acidosis and 5 mg folic acid as supportive therapy, so monitoring of electrolyte levels and acid-base status is required (PERNEFRI, 2023). The administration of 0.9% NaCl as a fluid therapy needs to be adjusted to the clinical condition and hydration status considering that the patient has AKI, while the administration of colchicine 500 mcg for gout complaints with uric acid of 7.9 mg/dL requires special attention because the elimination of the drug can be disrupted in kidney disorders.

Based on the evaluation of the right indications, the right patient, the right medication, and the right dose, therapy in Mr. A has generally been adjusted to his clinical condition. Most doses are appropriate, but there are some potential DRPs in the form of lower doses of enoxaparin, ranitidine, and lactulose, as well as interactions between acetosal, clopidogrel, and enoxsaparin that increase the risk of bleeding and therefore require monitoring. During follow up, the patient's condition showed improvement in shortness of breath and kidney function, characterized by a decrease in creatinine from 1.5 to 1.1 mg/dL and urea from 28 to 15 mg/dL. Pharmacists play a role in medication review, monitor the effectiveness and safety of therapy, and provide education related to drug compliance, lifestyle, and danger signs (PERKI, 2018).

CONCLUSION

Based on the results of the evaluation of therapy in Mr. A with a diagnosis of UAP post PTCA 1 stent, controlled hypertension, dyspepsia syndrome, and AKI stage 1 dd acute on CKD, all therapies including antiplatelets, anticoagulants, statins, antiischemia, antihypertensive, gastrointestinal therapy, and supportive therapy of kidney disorders in general have been in accordance with the principles of appropriate indication, appropriate patient, appropriate medication, and appropriate dose. Although several potential Drug Related Problems were identified in the form of lower doses of enochsaparin, ranitidine, and lactulose than the comparison dose as well as drug interactions that increased the risk of bleeding; during treatment, patients showed improvement in clinical conditions and kidney function. so it is recommended that therapy monitoring, kidney function, bleeding signs, and heart conditions be monitored periodically along with drug adherence education and healthy lifestyle, and pharmacists continue to conduct medication reviews to optimize the effectiveness and safety of therapy.

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