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Nursing Care for Mrs. R with Urinary System Disorders: Chronic Kidney Disease in the Inpatient Room of Royal Prima Hospital Medan in 2026

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ABSTRACT

Background: Chronic Kidney Disease (CKD) is a progressive and irreversible impaired kidney function, causing various health problems such as urinary elimination disorders, hypervolemia, electrolyte imbalance, and an increased risk of infection. Patients with late-stage CKD generally require hemodialysis therapy to maintain body function and prevent further complications.
Objective: To describe the implementation of nursing care in patients with urinary system disorders due to Chronic Kidney Disease undergoing hemodialysis therapy.
Methods: Case studies with a nursing process approach that includes assessment, nursing diagnosis, planning, implementation, and evaluation. The subject of the study is Mrs. R, a stage V CKD patient who is undergoing treatment in the inpatient room of Royal Prima Medan Hospital in 2026. Data was obtained through interviews, observations, physical examinations, and medical record documentation studies.
Results: The results of the study showed that the patient had severe oliguria (±100 ml/24 hours), edema in both legs, hypertension, increased urea and creatinine levels, and electrolyte balance disorders. Established nursing diagnoses include urinary elimination disorders, hypervolemia, risk of electrolyte imbalance, and risk of infection. The implementation of nursing was carried out for three days through monitoring fluid status, urine elimination, electrolyte balance, infection prevention, fluid restriction education, low-potassium diet, and hemodialysis therapy collaboration. Evaluation showed that there was an improvement in the patient's condition characterized by reduced edema, more stable blood pressure, decreased potassium levels, and no signs of infection in hemodialysis vascular access.
Conclusion: Comprehensive nursing care for CKD patients undergoing hemodialysis is able to help control fluid and electrolyte balance, reduce symptoms of hypervolemia, improve patient understanding of the disease, and prevent complications during treatment.

INTRODUCTION

The urinary system is a vital system responsible for maintaining the body's homeostasis through regulating the balance of fluids, electrolytes, and acid-bases, as well as the elimination of metabolic waste. The kidneys, as the main filtration organ, play a crucial role in filtering blood to produce urine as an excretory route for toxic substances. Disruptions in this system not only impact urinary patterns, but can also trigger life-threatening systemic complications if metabolic residues cannot be adequately excreted (Meydina & Rustiawati, 2024).

Chronic Kidney Disease (CKD) has become a global health problem with the incidence rate increasing every year. CKD is defined as progressive and irreversible damage to kidney function, which in an advanced stage causes organ failure in carrying out filtration, reabsorption, and secretion processes. This condition is often found in the productive to elderly age group, where patients with stage V (Terminal Kidney Failure) are the group with the highest percentage of those who require continuous medical intervention (Kusuma et al., 2026).

One of the main clinical manifestations of CKD is impaired urine elimination resulting from a decrease in the Glomerular Filtration Rate (GFR). In the terminal stage, the kidneys lose their ability to produce normal amounts of urine, which often manifests as oliguria or anuria. This disorder indicates that the urinary system has failed to carry out its excretory functions, which has a direct impact on the buildup of fluids and toxins in the patient's body (Meydina & Rustiawati, 2024)

Failure to eliminate urine leads to the accumulation of metabolic waste substances such as urea and creatinine in the blood, a condition known as uremia. High urea and creatinine levels in late-stage CKD patients often reach maximum levels (100%), which if not treated promptly through kidney replacement therapy, will lead to systemic poisoning. In addition. This disorder of the urinary tract also increases the risk of other complications such as Urinary Tract Infection (UTI) which worsens the patient's physical condition (Rsi, n.d. 2023)

Although hemodialysis therapy has become the standard of care to replace the filtration function of the kidneys, there are often gaps in the fulfillment of nursing care related to the convenience of urine elimination. Many patients who undergo dialysis still complain of urinary disorders such as bladder distension, urinary incontinence, and incomplete feeling when urinating. The focus of treatment, which is often fixed on hemodialysis machine procedures, makes self-management of urine elimination patterns and the health of the patient's urinary system sometimes receive less attention (Imayani, 2022)

The role of nurses is crucial in bridging these problems through the provision of comprehensive nursing care, from the assessment of urine characteristics to the implementation of elimination management interventions. Proper nursing measures, such as monitoring fluid intake and excretion and education about the signs of urinary disorders, have been proven to reduce the level of bladder distension and improve patients' quality of life. In a hospital environment, the success of care is highly dependent on the accuracy of nurses in identifying specific urinary problems in each individual (Meydina & Rustiawati, 2024).

Royal Prima Medan Hospital is one of the referral center hospitals in North Sumatra that serves many CKD patients in the hemodialysis room. Based on the phenomenon of urinary elimination disorders that are still often found in patients undergoing routine therapy, it is necessary to deepen nursing care that focuses on the urinary system. Therefore, the author is interested in conducting a case study with the title **"Nursing Care for Mrs. R with Urinary System Disorders: Chronic Kidney Disease in the Hemodialysis Room of Royal Prima Hospital Medan in 2026".**

Assessment
BIODATA.
CASE REVIEW

1. PATIENT IDENTITY

Name	: Mrs. R
Gender	: Female
Age	: 39 Years Old
Marital status	: Married
Religion	: Christian
Education	: High School
Jobs	: Housewives
Address	: Helvetia
Hospital admission date	: 21 April 2026 Register No. 021456
Room/room	: Hospitalization 5b Floor
Blood type	A Letter to the Editor
Date of review	: April 22, 2026 Date of
operation	: None
Medical Diagnostics	: Chronic Kidney Disease (CKD) V+

2. PERSON IN CHARGE

Name : Mr. A
Relationship with the patient : Husband Job :
Self-employed
Address : Helvetia

MAIN COMPLAINTS.

Patients come to the hospital complaining of very little BAK since the last few months to no BAK at all. Patients also complain of swollen legs, get tired quickly, and have to undergo regular dialysis (hemodialysis).

CURRENT MEDICAL HISTORY

a. Provocative/Palliative
   1. What causes it
      Patients said complaints arose due to kidney disease that had been suffered since ±2 years ago and had become more aggravating in recent months.
   2. Things that improve the situation
      Patients say complaints are slightly reduced after undergoing hemodialysis and rest.

b. Quality/Quality
   1. How it feels
      Patients say that the body feels weak, tires quickly, the legs feel heavy because they are swollen, and urinate very little.
   2. How to see
      The patient appeared weak, pale, edema in both legs, and family-assisted activities

c. Region
1. Where is the location
Edema is present in both lower limbs
2. What causes it
   Due to fluid buildup due to decreased kidney function

d. Severity
   Patients said that daily activities were disrupted because they were tired quickly and tightness when doing light activities

e. Time (when it starts to arise and how it happens)
   The complaints have been felt since ±2 years ago and have become more aggravating in the last 3 months

PAST MEDICAL HISTORY

3. Diseases that have been experienced
   The patient has a history of hypertension since 8 years ago.
4. Treatment/actions taken
   The patient routinely takes antihypertensive drugs and undergoes hemodialysis 2 times a week.
5. Have been treated/operated on.
   The patient has been treated for tightness and edema due to kidney failure.
6. Duration of treatment
   For 5 days
7. Allergies
   Patients say they have no drug or food allergies
8. Immunization
   Patients say basic immunizations are complete.

FAMILY MEDICAL HISTORY

9. Parents
   The patient's father had a history of hypertension.
10. Siblings
    No siblings have a similar illness
11. Existing hereditary diseases Hypertension.
12. Deceased family members None
13. Cause of death None

HISTORY/PSYCHOLOGICAL STATE

14. The languages spoken are Indonesian and Batak.
15. Perceptions of beliefs
    The patient believes his illness is a test and hopes to be healed with treatment and prayer.
16. Existing hereditary diseases
    a. Body image : The patient is bothered by the condition of the body that is weak and swollen.
    b. Self-ideal : The patient wants to return to health and normal activities.
    c. Self-esteem : Patients sometimes feel become family burden.
    d. Self-Role : Patient plays the role of a housewife
    e. Personal identity : The patient knows himself well.
17. Emotional state
    The patient seemed anxious about the condition of his disease.
18. Attention to others/interlocutors The patient is cooperative when talked.
19. Relationship with a GOOD family
20. Relationship with siblings BAIK
21. Relationships with others. GOOD
22. Favorites
    Watch television and get together with family.
23. Adaptability
    The patient is able to adapt gradually to the condition of his disease.
24. Self-defense mechanisms
    Patients often discuss with their families about their illness.

PHYSICAL EXAMINATION.

25. General conditions
    The patient appears weak, compos mentis, good consciousness
26. Vital signs

Body temperature	: 37, 6°C	Pulse	: 88 x/min
TD	: 160/100mmHg	RR	: 24 x/min
T B	: 160 cm	BB	: 58 kg

27. Head and neck examination
    a. Head and hair.
    a. Head
    Shape :symmetrical
    São Paulo : No abnormalities Scalp : Clean
    b. Hair
    Hair spread and condition :
    Smell :Odorless Skin tone A Man Who Is Mature
    c. Face
    Skin tone : Pale Facial
    Structure: Symmetrical
    b. Eyes.
    a. Completeness and symmetry
    Completeness and symmetry: Right and left symmetrical
    b. Eyeballs : No edema
    c. Conjunctiva and sclera : Anemic conjunctiva, non-icteric sclera

d. Pupil : Isokor
e. Cornea and iris : Normal
f. Visus : Good
g. Eyeball pressure : Normal

c. Nose
a. Nasal bones and septal position of rice : Normal
b. Nostrils : Clean, no secrets
c. Nose lobes : No nasal lobe breathing
d. Ears
a. Ear shape : Symmetrical
b. Ear size : Normal
c. Ear holes : Clean
d. Hearing acuity : Good
e. Mouth and pharynx
a. Condition of the lips : Dry
b. Condition of the gums and teeth : Clean
c. The condition of the tongue : Slightly dirty
d. Oropharynx : No abnormalities
f. Neck
a. Position of the trachea : Middle
b. Thyroid : No magnification
c. Sound : Clear
d. Lymph nodes : No magnification
e. Venus jungularis : No magnification
f. Carotid pulse rate : Strong Touch

28. Intergumenical examination
1. Hygiene : Clean
2. Warmth : Warm
3. Color : Pale
4. Turgor : Dry
5. Humidity : Descending
6. Abnormalities in the skin : Edema of the Second limb(+2)

29. Breast and underarm examination
1. Breast size and shape : Symmetrical
2. Color of the breasts and areolas : Normal
3. Breast and putting abnormalities : Nothing.
4. Axillary and elavicular : No gland dilator

F. Thoracic/chest examination
a. Thoracic inspection.
a. Shape of the thorax : Symmetrical
b. Breathing
- Frequency : 24 x/min
- Rhythm : Regular
c. Signs of difficulty breathing: Mild shortness of breath during activity
b. Lung examination
a. Palpation of chest movements : Symmetrical
b. Percussion : Sonor
c. Auscultation
- Breath sound : Vesicles
- Speech sounds : Normal

- Additional sound : Ronki fine basal lung

c. Heart exam

a. Inspection : No abnormal pulsation

b. Palpation

- Pulsation : Teraba
- Ictus cordis : Normal

c. Percussion

- Heart limits : Normal

d. Auscultation

- Heart Sound I : Normal
- Heart Sound II : Normal
- Additional heart sounds : None
- Murmur : Nothing.
- Frequency : 88 x/min

G. Abdominal examination

1. Abdominal inspection

a. Abdominal shape : Symmetrical

b. Lumps/masses : None

c. Shadow of blood vessels : Nothing.

2 Auscultation

a. Intestinal peristaltics : 8 x/min

b. Children's heart sounds (BJA) : Not studied

3 Palpation

a. Signs of pressure pain : None

b. Lumps/masses : None

c. Signs of aseites : None

d. Liver : Not Enlarged

e. Link : Not Enlarged

f. Mc. Burney's Point : Painless

4. Percussion

a. Abdominal voice : Timpani

b. Aseites Inspection : Negative

H. Genital examination and surrounding areas

1. Genitalia

a. Pubic hair : Normal

b. Urethral opening : Clean

c. Abnormalities in the external genitalia and inguinal region : None

2 Anus and perineum

a. Lunagn anal : Normal

b. Abnormalities in the anus : None

c. Perimeter : Clean

I. Musculoskeletal/extremity examination

1. Muscle symmetry : Symmetrical

2. Edema examination : Edema of the second limb +2

3. Muscle strength : 4/5

4. Dryness on the extremities and nails : Pale nails

J. Neurological examination

1. Level of awareness
   GCS: 15, E: E4, M: M6, V: V5
2. Meningeal sign : Nothing.
3. Mental Status
   a. Emotional/emotional state : Mild anxiety
   b. Orientation : Good
   c. Thought process (memory, attention, decision, calculation) : Good
   d. Motivation (willingness) : Want to be healed
   e. Language :
4. Cranial nerve : Clear
   a. Olfactory nerve/ N I: Within normal limits
   b. Optic Nerve/ N II : Weak during strenuous activity
5. Motor function
   a. How to walk : Weak during strenuous activity
6. Sensory function : Normal
7. Reflex : Normal

PATTERNS OF DAILY HABITS.

1. Sleep patterns and habits
   1. Bedtime : 22.00 WIB
   2. Wake-up time : 05.00 WIB
   3. Sleep problems : Often waking up because of tightness and wanting to go
   4. Things that make it easier to sleep, often wake up because of tightness and want to go
   5. Things that make it easier to wake up Assisted by Family.
2. Elimination pattern
   a. CHAPTER

a. BAB PATTERN	: 1x/Day	Use of laxatives	: no
b. Feces character	: Lembek	FINAL CHAPTER	: Morning
c. History of bleeding	: No Diarrhea		:no

b. BAK

a. BAK Pattern : ±100 ml/24 Hours Incontinence :no

b. Characteristics : Deep Yellow Color Retention :yes

c. Pain/burning/difficulty with BAK : yes

d. History of kidney/bladder disease : yes

e. Use of diuretics : yes

3. Efforts to solve problems

Patients undergo routine hemodialysis and fluid restriction

3. Eating and drinking a.Symptoms (Subjective)

a. Diit (type) : Low Salt And Low Potassium Diet Total Foods Number Of Meals Per Day: 3 Times/Day

b. Diet pattern : Small but frequent portions

c. Loss of appetite : YES

d. Headache pain : No

e. Related to : Nausea

f. Healing with : Istrahat

g. Food allergies/intolerances : None

h. Net weight : 66 kg

b. Signs (Objective)

Weight now : 68 Kg Body

shape : Medium

3. Troubleshooting efforts : Diet According to Medical Recommendations

4. Amount and type of food : Rice, Low Salt Side Dishes, Certain Fruits

5. Time of administration of liquids : A little but often

6. Food and beverage problems

a. Difficulty chewing : No

b. Difficulty swallowing : No

c. Unable to eat alone : No

7. Troubleshooting efforts

Patients follow dietary recommendations from health workers

4. Personal hygiene

a. Body maintenance : Partially Assisted by Family

b. Dental and oral care : Done 2x a day

3. Nail care : Clean

5. Pattern of activities/activities

The patient's activity is limited because they get tired quickly and are crowded when doing light activities.

RESULTS OF SUPPORTIVE/DIAGNOSTIC EXAMINATIONS.

A. Medical diagnosis : Stage V Chronic Kidney Disease

B. Diagnostic/medical support examination

1. Laboratory

Inspection	Results	Normal Values
Hb	9.8 g/dL	13-17 g/dL
Urea	85 mg/dL	10-50 mg/dL
Creatinine	7.2 mg/dL	0.6-1.3 mg/dL

Albumin	2.7 g/dL	3.5-5 g/dL
Potassium	5.8 mEq/L	3.5-5.0 mEq/L
Natrrium	130 mEq/L	135-145 mEq/L
GFR	12ml/min/1.73m2	90-120ml/min/1.73m2
Leukocytes	9.500/mm3	4,000-10,000/mm3

2. X-rays : Mild Cardiomegali
3. ECG : Sinus Rhythm, Signs of Mild Hyperkalemia (High T waves).
4. Ultrasound : Bilateral Shrinking Kidney Size.
5. Miscellaneous: Patients undergo routine hemodialysis 2 times a week.

MANAGEMENT AND THERAPY

NO	DRUG NAME	DOSAGE	EFFECTS
1	Furosemid	40 mg	Diuretics
2	Amlodipin	10 mg	Lowers blood pressure
3	Folic acid	1 tablet	Helps in the formation of blood cells
4	Calcium carbonate	500 mg	Helps with filtration function
5	Hemodialysis therapy	2x/week	Helps with filtration function

Data analysis

Yes	Data	Etiology	Problem
1	**DS:** Patients say that there has been very little BAK in the last few months to no BAK at all. **DO:** Urine production ±100 ml/day or anuria, GFR 12 mL/min, urea 85 mg/dL, creatinine 7.2 mg/dL	Decreased function kidney due to progressive nephron damage in CKD	(D.0040) Urinary Elimination Disorder

2	**DS:** Patients complain of swollen bodies, fatigue quickly, and rapidly gaining weight before hemodialysis **DO:** Leg edema (+2), BB increased 2–3 kg, TD 160/100 mmHg, mild shortness, intake- Unbalanced output	Impaired fluid excretion due to decreased kidney function	(D.0022) Hypervolemia
3	**DS:** Patients complain of weakness and fatigue easily **DO**: K: 5.8 mmol/L (↑), Na: 130 mmol/L (↓), GFR 12 mL/min, ECG shows high T waves	Decreased function Kidney Filtration and the hemodialysis process not able to fully stabilize Electrolyte	(D.0037) Risk of Electrolyte Incompatibility
4	**DS:** Patients do not complain of current infections **DO:** AV fistula of the left arm, routine HD invasive action, dry and itchy skin, uremia, leukocytes 9,500/mm³	Presence Hemodialysis vascular access hold Body Consequences of uremia	(D.0142) Risk of Infection

Nursing Diagnosis

Based on the results of the assessment and analysis of data on Mrs. R with Chronic Kidney Disease in the Hemodialysis Room of Royal Prima Hospital Medan in 2026, the nursing diagnosis was obtained as follows:

Urinary Elimination Disorder (D.0040) is associated with decreased renal function due to progressive nephron damage in CKD characterized by urine production ±100 ml/day or anuria, GFR 12 mL/min, urea 85 mg/dL, creatinine 7.2 mg/dL

Hypervolemia (D.0022) associated with Fluid excretion disorder due to decreased renal function is characterized by limb edema (+2), increased BB of 2–3 kg, TD 160/100 mmHg, mild tightness, unbalanced intake-output

The risk of Electrolyte Imbalance (D.0037) associated with Decreased renal filtration function and incapacitated hemodialysis process is fully characterized by Kaliu 5.8 mmol/L (↑), Na: 130 mmol/L (↓), GFR 12 mL/min, ECG showing high T waves

Risk of Infection (D.0142) is associated with vascular access to hemodialysis and decreased immunity due to uremia characterized by AV fistula of the left arm, routine HD invasive procedures, dry and itchy skin, uremia.

Nursing Intervention

Yes	Nursing Diagnosis	Objectives and Outcome Criteria	Intervention
1	Urinary Elimination Disorder (D.0040) is associated with decreased renal function due to progressive nephron damage in CKD	After nursing actions have been carried out during 3×24 hours expected urinary elimination improves (L.04034) With the result criteria: - BAK Frequency Improve - Urine characteristics improve - Increased urinary sensation - Decreased bladder distension - The volume of urine residue decreases - Dripping urine (dribbling) decreased	Elimination Management Urine (I.04152) Observations: - Identify signs and symptoms of urinary retention or incontinence - Identify the factors that cause retention or urinary incontinence - Urine elimination monitor (E.g. frequency, consistency, aroma, volume, and color) Summary: - Record urination times and discharges - Limit fluid intake - Take a sample of middle urine or culture Education:

		- Enuresis, Dysuria, Anuria, decreased	- Teach the signs and symptoms of urinary tract infections - Teach Measuring fluid intake and urine excretion - Teach Recognize the signs of urination and the right time to urinate - Recommend cutting back on bedtime drinking Collaboration: - Collaboration in the administration of urethral suppositories, If necessary
2	Hypervolemia (D.0022) is associated with impaired fluid excretion due to decreased kidney function	After nursing actions have been carried out during 3×24 hours expected Fluid Balance to improve (L.05020) With the result criteria: - Increased fluid intake - Increased urine output - Increased food intake - Pressure Blood improves	Hypervolemia Management (I.03114) Observations: - Check for signs and symptoms of hypervolemia - Identify the cause of hypervolemia - Monitor Hemodynamic status - Fluid intake and output monitor signs of increased pressure plasma oncotics (e.g. protein levels and increased albumin) - Monitor Teraupetic diuretic side effects:

		- Turgor skin improves - Weight improves - Mucosal membranes improve	- Weigh in every day at the same time - Limit fluid and salt intake Increase 30-40o Headboard Education: - Encourage reporting if urine output <0.5 mL/kg/hour in 6 hours - Recommend reporting if the BB increases >1 kg in a day - Teach how to measure and record fluid intake and direction - Teach How to limit fluids Collaboration: - Diuretic administration collaboration - Potassium loss replacement collaboration diuretic consequences
3	Risk of Electrolyte Imbalance (D.0037) is associated with decreased renal filtration function and a completely incapable hemodialysis process	Purpose After nursing actions are carried out during 3×24 hours expected rate serum electrolyte in normal limit (L.03021) With the result criteria:	Electrolyte Monitoring (I.03122) Observations: - Identify possible causes of electrolyte imbalance - Monitor serum electrolyte levels - Monitor nausea, vomiting, and diarrhea - Monitor loss of fluids, if necessary

		- Serum increased sodium - Serum Potassium Increase - Serum Increased calcium - Serum Magnesium Increased - Serum phosphorus increased	- Monitor signs and Symptoms hypokalemia (e.g. weakness muscles, flat T waves or upside down, fatigue, anorexia, dizziness) - Monitor signs and Symptoms hyperkalemia (e.g., restlessness, nausea , vomiting, flat P waves) -Monitor the signs and symptoms of hyponatremia - Monitor signs and Symptoms Hypernatremia Terapaetic: - Set monitoring time intervals according to the patient's condition - Document the results of Education monitoring: - Explain the purpose and Monitoring Procedures - Inform monitoring results, if necessary
4	Risk of Infection (D.0142) is related to vascular access to hemodialysis and decreased immunity due to uremia, body temperature 37.6o	After nursing actions have been carried out during 3×24 hours expected infection rate to decrease (L.09097) With the result criteria:	Infection Prevention (I.14539) Observations: - Monitor signs and symptoms of local and systemic infections - Summary: -Limit the number of endings - Give Skin care on the edema area

		- Decreased fever -Redness decreases - Pain Downhill - Decreased swelling	- Wash your hands before and after contact with the patient and the patient's environment - Maintain aseptic techniques in high-risk patients Education: - Describe the signs and symptoms of infection - Teach how to wash your hands properly - Teach cough etiquette - Teach how to check the condition of the wound - Encourage increasing nutritional intake Collaboration: - Grant collaboration immunization, If necessary

Nursing Implementation

Date	No Dx	Hours	Implementation	Results	Paraf
April 22, 2026	1	08.00	- Observation of urine quantity and frequency - Monitoring daily urine output - Recording fluid intake-output - Education on hemodialysis dependency - Urea and cretinin examination	Urine production ±100 ml/day (heavy oliguria). Patients are exposed to n "already	

				rarely BAK".	
	2	10.30	- Measuring vital signs (TD, pulse, RR) - Weighing the patient's body weight - Examining extremity edema - Limit fluid intake according to the program (±1000 ml/day) - Hemodialysis collaboration	Leg edema is still (+2), BB increased 2 kg of dry weight, TD 160/100 mmHg.	
	3	13.00	- Monitoring signs of hyperkalemia (weakness, palpitations), electrolyte lab results (Na, K, Ca) - Regulating a diet with potassium - Explain Foods High in Potassium to Avoid - Audit collaboration electrolytes and hemodialysis	The patient appears weak, K 5.8 mmol/L, not yet The re is an arrhythmia.	

	4	15.30	- Observing body temperature, AV fistula condition - Performing vascular access treatment aseptically - Educate on how to wash hands and treat fistula - Collaboration: when there are signs of infection	Temperature 36.8°C, no there are signs of infection.	
April 23, 2026	1	08.00	- Monitoring the Output of Urine - Educate chronic kidney conditions - Support Patient Adaptation	Urine remains very little, the patient begins to understand the condition disease.	
	2	10.00	- Daily BB monitoring - Strict fluid restrictions - Shortness of breath observation - Hemodialysis collaboration	Edema begins to decrease (+1), BB Down 1 kg.	
	3	13.00	- Observations Signs of advanced hyperkalemia - Monitoring Re-electrolyte results - Education Diet Low Potassium Extension - HD Collaboration	Potassium drops to 5.5 mmol/L, patient still weak lightweight.	

	4	15.00	- Observation of signs of infection - Sterile fistula AV treatment - Monitoring body temperature	Temperature 36.7°C, the fistula area is clean.	
24 April 2026	1	08.00	- Evaluating tightness - Monitor fluid output intake - Continuing education, - Provide psychological support - Hemodialysis Collaboration	Urine Keeping uria minimal, the patient accepts the condition.	
	2	09.30	- Monitoring BB - Edema observation - HD Collaboration - Education Fluid Restriction	Edema improves, BB down, TD 130/85 mmHg	
	3	11.00	- Electrolyte lab monitoring - Education Diet Long term - Observation of clinical symptoms	Potassium 5.1 mmol/L, condition more stable.	
	4	13.30	- Observation of signs of infection - Aseptic treatment - Education HD access hygiene	No There are signs of infection, the temperature is stable at 36.5–36.8°C.	

Nursing Evaluation

Date	Nursing Diagnosis	Evaluation (SOAP)
April 22, 2026	Urinary Elimination Disorder (D.0040)	**Q:** Patients say BAK is so small for a long time that it is almost non-BAK. **O:** Urine ±100 ml/day (heavy oliguria), No normal BAK push, GFR 12 mL/min **A:** The problem has not been resolved. **Q:** Intervention continued.
	Hypervolemia (D.0022)	**Q:** The patient complains of swollen legs and weight gain. **O:** Edema (+2), TD 160/100 mmHg, BB increased by 2 kg **A:** Problem not resolved. **Q:** Intervention continued.
	Risk of Electrolyte Imbalance (D.0037)	**Q:** The patient complains of weakness and fatigue quickly. **O:** K: 5.8 mmol/L, Na: 130 mmol/L, No arrhythmias, Patient appears weak **A:** The problem has not been resolved. **Q:** Intervention continued.
	Risk of Infection (D.0142)	**A:** Patients do not complain of fever or pain at HD access. **O:** Temperature 37.6o C, AV fistula net **A:** Risks Infection not yet occurs

		P: Intervention Prevention Infection continued
April 23, 2026	Urinary Elimination Disorder (D.0040)	**Q:** Patients say that it is still very rare to have BAK. **O:** Urine remains ±100 ml/day, No significant change **A:** The problem has not been resolved **Q:** Intervention continued.
	Hypervolemia (D.0022)	**Q:** Patients say the swelling is slightly reduced after HD. **O:** Edema (+1), BB down 1 kg, TD 155/95 mmHg **A:** Partially solved. **Q:** Intervention continued.
	Risk of Electrolyte Imbalance (D.0037)	**Q:** The patient still feels mild weakness. **O:** K: 5.5 mmol/L, no arrhythmias **A:** Partially solved. **Q:** Intervention continued.
	Risk of Infection (D.0142)	**S:** Patients no complain of pain or fever. **O:** Temperature 36.7°C, no signs of infection **A:** The risk has not yet occurred **P:** Intervention infection prevention continued.

24 April 2026	Urinary Elimination Disorder (D.0040)	**A:** The patient understands that his kidney function is permanently declining. **O:** Urine remains little/anuria, patient cooperative. **A:** Problem partially resolved **Q:** Further education and adaptation support.
	Hypervolemia (D.0022)	**S:** Patients says the swelling decreases. **O:** Edema reduced, BB drop, TD: 130/85 mmHg **A:** Problem solved. **Q:** Intervention stopped
	Risk of Electrolyte Imbalance (D.0037)	**A:** Patients say the condition is more stable. **O:** Potassium 5,0 mmol/L, patients are fresher **A:** Problem solved. **Q:** Intervention stopped
	Risk of Infection (D.0142)	**S:** Patients no complain of infection complaints. **O:** Temperature 36.5–36.8°C AV fistula cleanThe patient seemed calm. **A:** The risk of infection does not occur **Q:** Intervention is stopped.

DISCUSSION

At the study stage, the author collected comprehensive data on Mrs. S with a medical diagnosis of end-stage Chronic Kidney Disease (CKD) who underwent routine hemodialysis therapy. Data collection was carried out through interviews with patients, direct observation, physical examinations, and review of the results of supporting examinations contained in the patient's medical records (Dewi & Mustofa, 2021).

From the results of the study, it was found that the patient complained of weak, swollen legs, and very little urine production in recent months. The patient also said that he had to undergo hemodialysis twice every week to help kidney function. This condition is in line with the theory that CKD causes a progressive decline in kidney function so that the kidneys' ability to excrete fluid decreases and urine production can experience oliguria to anuria. According to Potter & Perry, urinary elimination disorders in CKD patients occur due to damage to nephrons that interfere with the kidney's filtration process (Farhana et al., 2021).

In the medical history, it is now known that the patient has experienced a slow decrease in the amount of urine since approximately the last two years. These complaints are accompanied by edema, nausea, fatigue, and mild tightness when doing activities. This is in accordance with Smeltzer & Barre's theory which explains that end-stage CKD patients generally experience fluid retention and accumulation of metabolic residues that can cause edema, hypertension, nausea, and decreased activity tolerance due to uremia conditions (Armiyati et al., 2021).

The results of the physical examination showed that the patient's blood pressure was 160/100 mmHg, edema in both legs of +2 degrees, and urine production of about 100 ml per 24 hours. In addition, laboratory test results showed ureum 85
mg/dL, creatinine 7.2 mg/dL, GFR 12 mL/min/1.73m², potassium 5.8 mmol/L, and sodium 130 mmol/L. These results indicate severe kidney function disorders accompanied by electrolyte imbalances. According to Black & Hawks, increased urea and creatinine levels and decreased GFR are the main signs of kidney function impairment in CKD (Prastiwi, 2021).

An examination of the integument found an AV fistula on the left arm which was used as access to hemodialysis. Even though there are no signs of infection such as redness, pain, swelling, or increased body temperature, patients are still at high risk of infection due to repeated invasive procedures and decreased immune system due to uremia. This is in accordance with the opinion of Hinkle & Cheever who stated that patients undergoing hemodialysis are prone to infection in the vascular access area (Misdiyanti et al., 2022).

Based on all the data obtained during the study, the authors determined four nursing diagnoses, namely Risk of Electrolyte Imbalance, Hypervolemia, Urinary Elimination Disorder, and Risk of Infection. The determination of the diagnosis has been in accordance with the patient's condition and is supported by subjective and objective data found during the assessment process (Psychosocial & Pada, 2024).

Nursing Diagnosis

Based on the data from the results of the study on Mrs. R, the author determined four nursing diagnoses, namely Risk of Electrolyte Imbalance, Hypervolemia, Urinary Elimination Disorder, and Risk of Infection. The diagnosis is determined based on the results of subjective and objective data collection obtained during the assessment process and refers to the Indonesian Nursing Diagnosis Standards (SDKI).

The first diagnosis to be established was Risk of Electrolyte Imbalance which is associated with decreased renal filtration function and hemodialysis therapy. This diagnosis appeared because the patient complained of weakness and laboratory results showed that potassium levels increased to 5.8 mmol/L and sodium levels decreased to 130 mmol/L. In addition, a GFR value of 12 mL/min/1.73m² indicates a decrease in heavy kidney function so that the kidneys' ability to maintain electrolyte balance is disturbed. This condition is in accordance with the theory that CKD can cause electrolyte regulation disorders due to decreased glomerular filtration function (Sciences, 2020).

The second diagnosis, namely Hypervolemia, is related to impaired fluid excretion due to decreased kidney function. This diagnosis is established based on the patient's complaints of swelling in the legs and weight gain before undergoing hemodialysis. On physical examination, edema was found in the legs of +2 degrees, blood pressure of 160/100 mmHg, and an increase in body weight of about 2 kg. The data showed fluid retention caused by the kidneys' inability to excrete fluid normally. The theory states that hypervolemia in CKD patients occurs due to a decrease in the rate of glomerular filtration which causes fluid and sodium accumulation in the body (Celal, 2021).

The third diagnosis is Urinary Elimination Disorder which is related to decreased kidney function due to Chronic Kidney Disease characterized by oliguria. This diagnosis was established because the patient said the amount of urine was very small and the results of observations showed urine production of about 100 ml in 24 hours. The decrease in urine production occurs due to nephron damage which causes the urine formation process to be progressively disrupted. According to Potter & Perry, urinary elimination disorders in CKD patients are characterized by changes in the amount and frequency of urine due to decreased kidney

filtration ability (Irene et al., 2022).

The fourth diagnosis is the risk of infection related to vascular access, hemodialysis, and decreased immunity due to uremia. This diagnosis was established because the patient used the AV fistula as a routine hemodialysis access that could potentially be the entrance to microorganisms. In addition, the buildup of uremic toxin in CKD patients can also lead to a decrease in the body's immune system. Although at the time of the assessment no signs of infection such as fever were found, redness, pain, or increased leukocytes, patients remain at high risk of infection. This is in accordance with the theory that hemodialysis patients have a high risk of infection due to repeated invasive procedures (Meydina & Rustiawati, 2024)

Of the four diagnoses that have been established, the authors prioritize the Risk of Electrolyte Imbalance and Hypervolemia as the main problem because both conditions can cause serious complications and threaten patient safety if not treated immediately. Meanwhile, Urinary Elimination Disorders and Risk of Infection still require continuous management and monitoring to prevent further complications.

Intervention

The nursing intervention stage was carried out after the author determined the nursing diagnosis based on the data from the assessment results on Mrs. S. The planned intervention refers to the Indonesian Nursing Intervention Standard (SIKI) and is adjusted to the clinical conditions and needs of the patient during treatment. The nursing measures provided aim to reduce patient complaints, prevent complications, and help improve the patient's health condition optimally.

In the diagnosis of Electrolyte Imbalance Risk, nursing interventions are directed at monitoring electrolyte levels and preventing complications due to electrolyte imbalances, particularly hyperkalemia. The actions taken include observing signs and symptoms such as weakness, muscle cramps, and heart rhythm disturbances, monitoring the results of laboratory tests, especially potassium and sodium levels, and monitoring ECG results. In addition, patients are given education on the importance of undergoing a low-potassium diet and adherence to undergoing hemodialysis therapy according to a predetermined schedule. This action is in accordance with the theory that regular electrolyte monitoring is very important in CKD patients to prevent serious complications that can threaten the patient's life (Celal, 2021).

In the diagnosis of Hypervolemia, the intervention focused on controlling excess fluid in the patient's body. The authors monitored for signs of hypervolemia such as edema, increased blood pressure, weight gain, and shortness of breath. In addition, regular monitoring of fluid intake and output is carried out, advocating for fluid intake restrictions according to the therapy program, and positioning semi-fowler patients to help reduce shortness of breath. The author also provides education on fluid restriction and low-salt diets and collaborates with medical teams in the implementation of hemodialysis. The intervention is in accordance with the theory that explains that fluid regulation is the main action in managing hypervolemia in CKD patients (Irene et al., 2022).

In the diagnosis of Urinary Elimination Disorder, the nursing intervention is focused on monitoring the patient's urinary elimination and fluid balance patterns. The author observes the amount, frequency, color, and characteristics of the patient's urine, as well as records fluid intake and output every day. In addition, patients are given education about the causes of decreased urine production due to kidney function damage and the importance of adherence to hemodialysis therapy. According to Potter & Perry's theory, monitoring urine elimination is important to determine the development of kidney function and the condition of the patient's fluid balance (Aisara, 2021)

In the diagnosis of Infection Risk, the intervention carried out is more focused on infection prevention efforts in the vascular access area of hemodialysis. Nursing actions carried out include observing signs of infection such as redness, pain, swelling, increased body temperature, and changes in the condition of the AV fistula area. The author also conducts vascular access treatment using aseptic techniques and provides education to patients and families about the importance of maintaining the cleanliness of the fistula area and washing hands before touching the hemodialysis access area. This is in accordance with the theory that the application of aseptic techniques and vascular access monitoring is very important to prevent infection in hemodialysis patients (H. Yuliyanti et al., 2022)

In general, the nursing interventions given to patients have been tailored to the patient's condition and needs, with a primary focus on controlling fluid and electrolyte balance, monitoring urine elimination, and preventing infection. The intervention is expected to help improve the patient's condition and prevent complications during hemodialysis therapy.

Implementation

The nursing implementation stage is the implementation of an action plan that has been prepared based on the patient's nursing diagnosis. The implementation was carried out in accordance with the conditions and needs of Mrs. during treatment and guided by the nursing interventions that had been planned in advance. The implementation of nursing measures is carried out in stages for three days with the aim of helping to overcome patient nursing problems, prevent complications, and maintain the patient's physiological condition to remain stable.

In the diagnosis of Electrolyte Imbalance Risk, nursing implementation is focused on monitoring and preventing complications due to electrolyte disorders. The actions taken include observing signs and symptoms of electrolyte imbalance such as weakness, muscle cramps, and changes in heart rhythm, monitoring the results of laboratory tests, especially potassium and sodium levels, and providing education related to a low-potassium diet and compliance with routine hemodialysis therapy. During the implementation of the action, the patient shows a cooperative attitude and begins to understand the types of foods that need to be restricted in order to prevent an increase in potassium levels in the blood. This implementation is in line with research that states that regular electrolyte monitoring and dietary education have an important role in preventing complications in CKD patients undergoing hemodialysis (Kusumajaya & Faizal, 2023).

In the diagnosis of Hypervolemia, the implementation of nursing is directed at controlling the excess volume of fluid in the patient's body. The actions taken include monitoring blood pressure, edema, breathing frequency, and weight changes every day. In addition, strict fluid intake and output monitoring is carried out, advocating fluid restriction according to the therapy program, and helping patients maintain a semi-fowler position to reduce complaints of shortness of breath. The author also collaborated with the medical team in the implementation of routine hemodialysis. After the action was performed, the edema in the patient appeared to decrease and there was gradual weight loss. This is in accordance with research that states that fluid management and adherence to fluid restrictions are effective in helping to reduce the incidence of hypervolemia in patients with chronic kidney failure (Diwyami, 2024).

In the diagnosis of Urinary Elimination Disorder, nursing implementation focuses on monitoring the patient's urinary elimination and fluid balance patterns. The actions taken include observation of the amount of urine, frequency of urination, urine color, and recording fluid intake and output every day. In addition, patients are given education about the causes of decreased urine production due to kidney function damage and the importance of adherence to hemodialysis therapy. During the implementation process, the patient begins to understand the condition of the disease he is experiencing and is able to follow the recommendations for fluid restriction given. Research states that monitoring fluid balance and hemodynamic status is very important in CKD patients undergoing hemodialysis to maintain the stability of the patient's condition (Sucipto et al., 20121)
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In the diagnosis of Infection Risk, nursing implementation is focused on infection prevention measures in the vascular access area of hemodialysis. The actions taken include observing signs of infection such as redness, pain, swelling, and increased body temperature in the AV fistula area. The author also conducts vascular access treatment with aseptic techniques and provides education to patients and families about the importance of maintaining hand hygiene and hemodialysis access areas. During the implementation of the procedure, no signs of infection were found in the area of the AV fistula and the patient's body temperature remained within normal limits. The implementation is in accordance with research that explains that the proper application of aseptic techniques and vascular access treatment can help reduce the risk of infection in hemodialysis patients (Kusumajaya & Faizal, 2023)

Overall, the nursing implementation given to Mr. A has been carried out in accordance with the patient's action plan and clinical condition. During the process of implementing nursing measures, patients appear cooperative and able to follow the education and recommendations given by the nurse. The implementation is expected to help maintain the stability of the patient's condition, reduce the complaints experienced, and prevent complications during hemodialysis therapy.

Evaluation

The nursing evaluation stage is carried out to assess the development of the patient's

condition after being given nursing implementation for three days of treatment. Evaluation was carried out by comparing the patient's condition before and after nursing actions based on previously set goals and outcome criteria. From the results of the evaluation, it is known that the patient's condition has progressed quite well in each nursing diagnosis that has been enforced.

In the diagnosis of Electrolyte Imbalance Risk, the evaluation results showed an improvement in the patient's condition. Patients say the body feels more comfortable and no longer experiences muscle cramp complaints like before. The results of laboratory tests also showed that potassium levels began to decline and during observation no heart rhythm disturbances were found. In addition, patients begin to understand the types of foods that need to be restricted to maintain the body's electrolyte balance. These conditions show that the electrolyte education and monitoring measures carried out have a positive impact on the patient's condition. Research states that adherence to therapy and control of fluid and electrolyte balance is essential to prevent complications in CKD patients undergoing hemodialysis (Regina, 2024).

In the diagnosis of hypervolemia, the results of the evaluation show a decrease in signs of excess fluid volume. Edema in both limbs seemed to decrease, the shortness of breath felt by the patient decreased, and the patient's blood pressure became more stable than at the beginning of the study. In addition, the patient's weight decreased after undergoing routine hemodialysis therapy and fluid restriction. Patients also seemed to be able to follow the recommendations to limit fluids given during treatment. These results show that fluid management carried out during treatment is quite effective in helping to reduce hypervolemia conditions in patients (Regina, 2024).

In the diagnosis of Urinary Elimination Disorder, the results of the evaluation showed that the patient's urine production was still in small amounts, but the patient's urine elimination condition was more monitored and stable during the treatment period. Patients begin to understand the causes of decreased urine production due to damage to kidney function and the importance of undergoing regular hemodialysis therapy. In addition, patients are able to follow the recommended fluid restriction given to help maintain body fluid balance. The study explains that self-care management education in hemodialysis patients can improve patients' ability to control disease conditions and maintain their health stability (Hioda et al., 2024).

In the diagnosis of Infection Risk, the results of the evaluation showed that during the treatment period no signs of infection were found in the AV fistula area. The vascular access area appeared clean and no redness, swelling, pain, or increased body temperature were found. Patients and families are also able to explain how to maintain the cleanliness of the fistula area and the importance of washing hands before touching the hemodialysis access area. This shows that the education and infection prevention measures provided have been well understood by patients and families so that they can help reduce the risk of infection (Limpeleh, 2020)

Overall, the results of the evaluation showed that the nursing action given to Mr. A provided a fairly good development of his condition. Some nursing problems have improved and conditions. The patient appeared to be more stable during hemodialysis therapy. The evaluation carried out is the basis for determining the follow-up of the next nursing care so that the patient's condition remains under control and complications can be prevented.

CONCLUSION

Based on the results of nursing care that has been carried out on Mr. A with a medical diagnosis of end-stage Chronic Kidney Disease (CKD) who underwent hemodialysis therapy, the author gained real experience in providing comprehensive nursing care starting from the stage of review, diagnosis enforcement, intervention, implementation, to nursing evaluation.

At the assessment stage, it was found that the patient experienced complaints of weak body, edema in both legs, decreased urine production, and underwent routine hemodialysis. The results of physical and supporting examinations showed a decrease in severe kidney function characterized by an increase in urea and creatinine, a decrease in GFR, electrolyte imbalance, and fluid retention.

Based on the data from the study, the author established four nursing diagnoses, namely Risk of Electrolyte Imbalance, Hypervolemia, Urinary Elimination Disorder, and Risk of Infection. The nursing interventions carried out are focused on monitoring fluid and electrolyte balance, monitoring urine elimination, controlling excess fluid, and preventing infections in vascular access to hemodialysis.

The implementation of nursing is carried out during the three days of treatment by involving the patient and family in each nursing action given. The actions taken include monitoring vital signs, monitoring fluid intake and output, observation of vascular access conditions, education on fluid and diet restrictions, and collaboration in the implementation of hemodialysis. During the implementation process, the patient appeared cooperative and was able to follow the recommendations given.

The results of the evaluation showed that the patient's condition was developing quite well. Edema and shortness of breath are reduced, the condition of body fluids is more controlled, the patient understands the importance of fluid restriction and adherence to hemodialysis therapy, and no signs of infection are found in the AV fistula area. Thus, the nursing care provided is able to help maintain the stability of the patient's condition and prevent further complications in CKD patients undergoing hemodialysis.

SUGGESTIONS

1. For Hospitals

It is hoped that hospitals can continue to improve the quality of health services, especially for patients with Chronic Kidney Disease (CKD) who undergo hemodialysis therapy through improving optimal nursing services, providing adequate facilities and infrastructure, and implementing sustainable health education to patients and families to prevent complications during hemodialysis therapy.

2. For Nurses

It is hoped that nurses can improve their ability to provide comprehensive nursing care to CKD patients with hemodialysis therapy, especially in monitoring fluid and electrolyte balance, preventing infection, and providing education related to fluid restriction, diet, and compliance with hemodialysis therapy.

3. For Patients and Families

It is hoped that patients and their families can increase compliance with hemodialysis therapy, carry out fluid and diet restrictions as recommended by health workers, maintain cleanliness of vascular access areas, and routinely carry out health controls so that the patient's condition remains stable and complications can be prevented.

4. For Educational Institutions

It is hoped that the results of this scientific paper can be a source of reference and learning material for nursing students in providing nursing care to patients with Chronic Kidney Disease (CKD) who are undergoing hemodialysis therapy.

5. For Next Authors

It is hoped that the author can further develop this scientific paper by adding a more in-depth discussion about the management of nursing care for CKD patients with hemodialysis therapy so that it can become a more complete and useful study material.

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