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Nursing Management of Patients with Renal and Urinary Disorders

Adult Health Nursing

Urinary tract infections, glomerulonephritis, nephrotic syndrome, renal calculi, acute kidney injury, chronic kidney disease, renal failure, dialysis and urinary obstruction.

For educational purposes only.

CHAPTER 09 / ADULT HEALTH NURSING 09. Nursing Management of Patients with Renal and Urinary Disorders

1. Renal assessment

Assess urine volume, dysuria, haematuria, flank pain, oedema, BP, weight and medications. Common tests: urinalysis, culture, urea, creatinine, eGFR, urine albumin-creatinine ratio, electrolytes and ultrasound. Creatinine depends on muscle mass and may lag behind acute injury; assess trends and output.

Urinary tract infection and pyelonephritis

Definition and pathophysiology: Ascending bacterial infection; cystitis affects bladder, pyelonephritis affects renal parenchyma.

Clinical features and investigations: Dysuria, frequency, urgency; flank pain and fever suggest upper infection. Urine culture when indicated.

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Management and nursing care: Prescribed antimicrobial therapy based on site/resistance, hydration as appropriate, assess sepsis and obstruction. Avoid treating asymptomatic bacteriuria routinely except specific indications.

Glomerulonephritis

Definition and pathophysiology: Glomerular inflammation due to immune/infectious causes; nephritic presentation.

Clinical features and investigations: Haematuria, hypertension, oedema, reduced GFR, variable proteinuria; urine microscopy, complement and disease-specific testing, biopsy if indicated.

Management and nursing care: Control BP/fluid and treat cause; monitor renal function, potassium, output and pulmonary oedema.

Nephrotic syndrome

Definition and pathophysiology: Glomerular barrier injury causes heavy proteinuria and hypoalbuminaemia.

Clinical features and investigations: Generalized oedema, foamy urine, hyperlipidaemia; quantify protein, albumin, renal function.

Management and nursing care: Treat cause, manage oedema and BP, monitor infection and thromboembolism; individualized sodium/nutrition advice and prescribed immunotherapy when indicated.

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Renal calculi

Definition and pathophysiology: Crystallization of urinary solutes; calcium stones common, also uric acid and infection stones.

Clinical features and investigations: Colicky flank pain radiating to groin, haematuria, nausea; urinalysis and ultrasound/CT.

Management and nursing care: Analgesia, appropriate fluids and specialist stone management. Fever plus obstruction, anuria or uncontrolled pain requires urgent referral; straining urine may help analysis.

Acute kidney injury (AKI)

Definition and pathophysiology: Acute decline in renal function from pre-renal hypoperfusion, intrinsic injury or post-renal obstruction.

Clinical features and investigations: Creatinine rise >= 0.3 mg/dL in 48 h, >= 1.5 times baseline within 7 days, or urine output <0.5 mL/kg/h for 6 h (KDIGO criteria).

Management and nursing care: Review haemodynamics, nephrotoxins and obstruction; manage cause and electrolytes, accurate intake/output, assess need for renal replacement therapy. Avoid automatic fluid boluses in overload.

Chronic kidney disease (CKD) and kidney failure

Definition and pathophysiology: Abnormal kidney structure/function persisting over 3 months. Advanced disease may cause uraemia, anaemia, acidosis and mineral-bone disorder.

Clinical features and investigations: Often asymptomatic early; eGFR and albuminuria determine risk; fatigue, pruritus, nausea and oedema in advanced disease.

Management and nursing care: BP/diabetes control, kidney-protective treatment when indicated, dietitian support, adjust drugs, monitor anaemia/electrolytes; plan dialysis/transplant and conservative care according to goals.

Urinary obstruction

Definition and pathophysiology: Impaired urine flow from BPH, stone, tumour or stricture.

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Clinical features and investigations: Retention, suprapubic distension, reduced output or hydronephrosis; bladder scan/ultrasound.

Management and nursing care: Urgent decompression when indicated using authorized catheterization/specialist procedure; monitor post-obstructive diuresis, electrolytes and infection.

2. Dialysis

Haemodialysis removes solutes and water across an extracorporeal membrane; peritoneal dialysis uses the peritoneum. Check pre/post weights, vital signs and access. Protect AV fistula from BP cuffs and venepuncture; assess thrill/bruit. For peritoneal dialysis maintain aseptic technique and promptly report cloudy effluent, fever or abdominal pain. Complications include hypotension, infection, electrolyte shifts and access problems. Dialysis indications include refractory hyperkalaemia, acidosis, overload, selected toxin exposures and uraemic complications.

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3. Nursing care

Review prescribed fluid/salt/potassium limits individually; teach medication reconciliation and avoid unapproved nephrotoxic medicines. Monitor skin, fatigue, nutrition, falls, access and psychosocial burden. Involve patients in modality decisions and refer for follow-up.

4. Important Examination Questions

Long Answer Questions

1. 1. Compare AKI and CKD
2. 2. explain dialysis and nursing care.

Short Answer Questions

1. 1. Differentiate nephritic and nephrotic syndrome
2. 2. describe UTI assessment
3. 3. explain urinary obstruction.

Very Short Answer Questions (with answers)

1. 1. What is eGFR? - Estimated glomerular filtration rate.
2. 2. What does cloudy PD effluent suggest? - Possible peritonitis.

5. Quick Revision

- AKI can occur despite urine production.
- CKD requires chronicity.
- Protect vascular access.

6. Conclusion

AKI can occur despite urine production. CKD requires chronicity. Protect vascular access.

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Practice questions

Choose one best answer. The answer key and explanations follow the questions.

1. What distinguishes chronic kidney disease by duration?

A. Abnormal kidney structure or function for over three months
B. Any creatinine rise within 48 hours
C. Low urine output for six hours alone
D. Flank pain lasting one day

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2. Which assessment finding in peritoneal dialysis should prompt concern for peritonitis?

A. Clear effluent without abdominal symptoms

B. Cloudy effluent

C. Mild transient fullness during uncomplicated filling

D. Stable weight with clear painless drainage

3. Which action protects a haemodialysis AV fistula?

A. Use the access limb for routine blood-pressure checks

B. Use the fistula for routine medication injections

C. Avoid BP cuffs and venepuncture on the access limb

D. Ignore changes in its thrill or bruit

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Answer key and explanations

1. A - Abnormal kidney structure or function for over three months

CKD requires chronic structural or functional abnormality persisting over three months.

2. B - Cloudy effluent

Cloudy peritoneal dialysis effluent can indicate peritonitis and needs prompt reporting.

3. C - Avoid BP cuffs and venepuncture on the access limb

An AV fistula must be protected from cuff pressure and venepuncture and checked for thrill and bruit.

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