

Summary Chart

Nephrology Nursing Certification Exam Development Guidelines

Structural Variables			
Exam Length and Format	Approximately 165 objective questions		
Question Presentation	40-60% independent questions 40-60% case-based questions		
Cognitive Ability Levels of Questions	Knowledge/Comprehension	15-25% of questions	
	Application	50-60% of questions	
	Critical Thinking	20-30% of questions	
Category	Renal Anatomy and Physiology	5-9% of questions	
	Diagnostic Assessment Relating to Renal Function	5-9% of questions	
	Renal Disorders	13-21% of questions	
	Chronic Kidney Disease Management (Stages 1- 5)	9-15% of questions	
	Renal Replacement Therapies	35-45% of questions	
	Nursing Management of the Pediatric Client	3-6% of questions	
	End-of-Life Issues	5-9% of questions	
	Pharmacology	9-15% of questions	
	Adjunctive and Complementary Therapies	1-3% of questions	
Contextual Variables			
Age and Gender	Age Group	Males	Females
	Child & Adolescent (0-18 years old)	1-5%	1-4%
	Adult (19-64 years old)	20-32%	10-22%
	Older Adult (65+ years old)	30-35%	20-24%
Client Culture	Exam questions reflect awareness, sensitivity, and respect for different values, beliefs and practices, without introducing stereotypes or bias.		
Client Health Situation	The client health situations presented in the exam questions reflect a holistic view of health promotion, prevention and active treatment, as well as rehabilitative, long term and end-of-life care.		
Health-Care Environment	The exam questions apply to the wide variety of settings in which nephrology nursing is practiced. The health-care environment is specified only where it is required for clarity.		

The Nephrology Nursing Exam List of Competencies

I. Renal Anatomy and Physiology

The nephrology nurse...

- 1.1 Identifies normal renal anatomy, including the structure and characteristics of:
 - 1.1a Kidneys
 - 1.1b Urinary tract
 - 1.1c Renal vasculature
- 1.2 Identifies normal renal physiology including:
 - 1.2a Urine formation
 - 1.2b Fluid balance
 - 1.2c Electrolyte balance
 - 1.2d Acid-base balance
 - 1.2e Blood pressure regulation
 - 1.2f Vitamin D synthesis
 - 1.2g Secretion of various hormones (e.g., renin, erythropoietin, etc.)

II. Diagnostic Assessment Relating to Renal Function

The nephrology nurse...

- 2.1 Describes the following laboratory tests, indications, and applicable nursing assessments and interventions:
 - 2.1a Bloodwork (e.g., chemistry, hematology, virology, eGFR, etc.)
 - 2.1b Urine tests (e.g., urinalysis, 24-hour urine collection for creatinine clearance, protein, etc.)

- 2.2 Describes the following diagnostic tests, indications, and applicable nursing assessments and interventions:
 - 2.2a Renal biopsy
 - 2.2b Vascular studies (e.g., renal scan, renogram, renal arteriogram, renal venogram, angiography, etc.)
 - 2.2c Ultrasound studies
 - 2.2d Radiologic studies (e.g., kidney, ureter and bladder (KUB), bone density, etc.)
 - 2.2e Renal MRI and CT
 - 2.2f Cystographic studies (e.g., cystogram, cystoscopy, etc.)

III. Renal Disorders

Acute Kidney Failure

The nephrology nurse...

- 3.1 Identifies and describes the etiology and pathophysiology of acute kidney failure:
 - 3.1a Prerenal
 - 3.1b Intrarenal
 - 3.1c Postrenal
- 3.2 Identifies the stages, describes the clinical course, implements and evaluates a plan of care in collaboration with the client in acute kidney failure:
 - 3.2a Initiating stage
 - 3.2b Oliguric stage
 - 3.2c Diuretic stage
 - 3.2d Recovery stage
- 3.3 Collects and analyzes data with respect to the client's physical and psychosocial response to acute kidney failure using laboratory results, diagnostic tests, history, and clinical assessment.

Chronic Kidney Disease

The nephrology nurse...

- 3.4 Describes the etiology and pathophysiology of chronic kidney disease:
 - 3.4a Glomerular disorders
 - 3.4b Nephrotic and nephritic syndrome

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- 3.4c Interstitial diseases
 - 3.4d Vascular diseases
 - 3.4e Cystic diseases
 - 3.4f Obstructive disorders
 - 3.4g Infectious diseases of the kidney
 - 3.4h Toxic nephropathies
 - 3.4i Renal disease in pregnancy
 - 3.4j Neoplasms of the kidney
 - 3.4k Autoimmune disorders
 - 3.4l Diabetic nephropathies
 - 3.4m Congenital/developmental diseases
- 3.5 Identifies the stages, describes the clinical course, implements and evaluates a plan of care in collaboration with the client for:
- GFR = glomerular filtration rate
(mL/ min/ 1.73m²)
- 3.5a Stage 1 – Kidney damage with normal or ↑ GFR ≥ 90
 - 3.5b Stage 2 – Kidney damage with mild ↓ GFR 60-89
 - 3.5c Stage 3 – Moderate ↓ GFR 30-59
 - 3.5d Stage 4 – Severe ↓ GFR 15-29
 - 3.5e Stage 5 – Kidney failure < 15 (may or may not include renal replacement therapy)
- 3.6 Describes the effects of chronic kidney disease on the following aspects:
- 3.6a Cardiovascular
 - 3.6b Neurological
 - 3.6c Immunological
 - 3.6d Gastrointestinal
 - 3.6e Endocrine
 - 3.6f Hematological
 - 3.6g Integumentary
 - 3.6h Pulmonary
 - 3.6i Musculoskeletal
 - 3.6j Reproductive
 - 3.6k Genitourinary
 - 3.6l Metabolic

- 3.6m Peripheral vascular
- 3.6n Psychosocial (e.g., cultural, psychological, personal support, financial, etc.)
- 3.6o Sexual function
- 3.7 Collects and analyzes data with respect to the client's physical and psychosocial response to chronic kidney disease using laboratory results, diagnostic tests, history, and clinical assessment.

IV. Chronic Kidney Disease Management (Stages 1-5)

The nephrology nurse...

- 4.1 Describes the goals of management for clients with chronic kidney disease.
- 4.2 Educates and supports the client regarding strategies to delay disease progression.
- 4.3 Collects and analyzes data in the management of chronic kidney disease and implements and evaluates a plan of care in collaboration with the client with respect to:
 - 4.3a Blood pressure management
 - 4.3b Diabetes management
 - 4.3c Dietary management
 - 4.3d Fluid management
 - 4.3e Control of anemia
 - 4.3f Control of hyperlipidemia
 - 4.3g Control of renal osteodystrophy
 - 4.3h Control of pain
 - 4.3i Prevention of infection
 - 4.3j Immunologic and serologic status (e.g., hepatitis, HIV, etc.)
 - 4.3k MRSA/VRE status
 - 4.3l Integumentary care (e.g., foot care)
 - 4.3m Cardiac management
 - 4.3n Psychosocial issues (e.g., sexual, cultural, psychological, personal support, financial, etc.)
 - 4.3o Access assessment, creation/placement and care
- 4.4. Identifies nursing considerations and monitors the effects of commonly used medications in clients with chronic kidney disease (e.g., antibiotics, ACE inhibitors, ARBs, iron, EPO, NSAIDs, etc.)
- 4.5 Educates and supports the client regarding available treatment options for kidney failure (e.g., renal replacement therapies, palliative care, end-of-life care, etc.).

V. Renal Replacement Therapies

Nursing management of the peritoneal dialysis client

The nephrology nurse...

- 5.1 Educates and supports the client regarding self-management of peritoneal dialysis
- 5.2 Describes the peritoneal membrane
- 5.3 Describes the principles of peritoneal dialysis with respect to solvent and solute removal/transport (e.g., diffusion, osmosis, convective transport, clearance, etc.)
- 5.4 Describes the contraindications and selection considerations for peritoneal dialysis (e.g., previous abdominal surgeries, physical/psychosocial status, personal support, etc.)
- 5.5 Describes types of peritoneal dialysis catheters and insertion methods.
- 5.6 Describes the indications, advantages, and disadvantages for the following peritoneal dialysis modalities:
 - 5.6a Continuous ambulatory peritoneal dialysis (CAPD)
 - 5.6b Intermittent peritoneal dialysis (IPD)
 - 5.6c Continuous cyclic peritoneal dialysis (CCPD)
 - 5.6d Nocturnal intermittent peritoneal dialysis (NIPD)
 - 5.6e Tidal peritoneal dialysis (TPD)
- 5.7 Describes the elements and implications of the peritoneal dialysis prescription:
 - 5.7a Composition of peritoneal dialysis solutions (e.g., osmotic agents, amino acids, buffers, etc.)
 - 5.7b Number of exchanges
 - 5.7c Volume of exchanges
 - 5.7d Timing of exchanges
 - 5.7e Dialysate temperature
- 5.8 Describes the assessment of the peritoneal dialysis client with respect to:
 - 5.8a Physical assessment
 - 5.8b Adequacy (e.g., Kt/V, PET, CrCl, etc.)
 - 5.8c Fluid volume balance
 - 5.8d Nutrition
 - 5.8e Metabolic status
 - 5.8f Immunologic and serologic status (e.g., hepatitis, HIV, etc.)
 - 5.8g MRSA/VRE status (e.g., antibiotic resistant organisms)
 - 5.8h Anemia
 - 5.8i Catheter exit site

- 5.8j Catheter (e.g., function, appearance, etc.)
- 5.8k Psychosocial response (e.g., coping, prescription adherence/fatigue, behaviour management issues, etc.)
- 5.8l Education needs
- 5.8m Failed kidney transplant
- 5.9 Describes the pathophysiology, assessment and nursing strategies for preventing and managing the following complications of peritoneal dialysis:
 - 5.9a Fluid volume imbalances
 - 5.9b Ultrafiltration failure
 - 5.9c Metabolic imbalances
 - 5.9d Membrane inadequacy or failure
 - 5.9e Malnutrition (e.g., protein, etc.)
 - 5.9f Hyper/Hypoglycemia
 - 5.9g Weight gain
 - 5.9h Pain (non-infectious, infectious)
 - 5.9i Cloudy effluent
 - 5.9j Peritonitis
 - 5.9k Exit site, cuff or tunnel infection
 - 5.9l Catheter complications (malfunction, damage, malposition, cuff extrusion, etc.)
 - 5.9m Leaks (e.g., pericatheter, extraperitoneal)
 - 5.9n Hemoperitoneum
 - 5.9o Pneumoperitoneum
 - 5.9p Increased intra-abdominal pressure
 - 5.9q Hydrothorax
 - 5.9r Hernias
 - 5.9s Encapsulating peritoneal sclerosis
 - 5.9t Alterations in gastrointestinal function
 - 5.9u Psychosocial impact
- 5.10 Identifies indications and interactions for commonly administered intraperitoneal medications (e.g., heparin, antibiotics, insulin, potassium chloride, etc.)
- 5.11 Identifies indications for commonly administered nutritional supplements (e.g., oral, intradialytic, etc.)

- 5.12 Develops, implements and evaluates the plan of care in collaboration with the peritoneal dialysis client for:
 - 5.12a Peritoneal catheter care (e.g., newly inserted, established, buried, exit site, infection prevention, removal, etc.)
 - 5.12b Prescription management (e.g., optimize fluid balance, preparation of solution, blood pressure, medication, etc.)
 - 5.12c Nutrition management
 - 5.12d Infection control measures
 - 5.12e Identification and management of complications
 - 5.12f Equipment preparation (e.g., dialysate, tubing, etc.)

Nursing management of the hemodialysis client

The nephrology nurse...

- 5.21 Describes the components of hemodialysis:
 - 5.21a Ultrafiltration
 - 5.21b Osmosis
 - 5.21c Hydrostatic pressure
 - 5.21d Backfiltration
 - 5.21e Clearance
 - 5.21f Diffusion
 - 5.21g Convection
 - 5.21h Water quality
 - 5.21i Transmembrane pressure
- 5.22 Describes the advantages, disadvantages and selection considerations for hemodialysis:
 - 5.22a In-centre
 - 5.22b Home (e.g., nocturnal, short daily, etc.)
 - 5.22c Satellite/community
- 5.23 Describes the indications, advantages, and disadvantages for the following hemodialysis access:
 - 5.23a Native arteriovenous fistula
 - 5.23b Arteriovenous graft (e.g., PTFE, Gortex, etc.)
 - 5.23c Central venous catheter (e.g., tunnelled or non-tunnelled)

- 5.24 Describes arteriovenous fistula/graft assessment, cannulation and management:
 - 5.24a Auscultation (e.g., bruit, etc.)
 - 5.24b Palpation (e.g., thrill, direction, etc.)
 - 5.24c Appearance (e.g., size, edema, collateral vessels, etc.)
 - 5.24d Cannulation technique (e.g., rotating sites, buttonhole)
 - 5.24e Access flow monitoring
 - 5.24f Recirculation studies
 - 5.24g Angiography

- 5.25 Describes the indications, advantages and disadvantages for single needle dialysis.

- 5.26 Describes the pathophysiology, assessment and nursing strategies for preventing and managing the following complications of vascular access:
 - 5.26a Central vein stenosis/thrombosis/occlusion
 - 5.26b Central venous catheter malfunction (e.g., occlusion, fibrin sheath formation, etc.)
 - 5.26c Central venous catheter malposition
 - 5.26d Central venous catheter cuff extrusion
 - 5.26e Embolism (e.g., air or thrombus)
 - 5.26f Hemothorax, pneumothorax, cardiac tamponade
 - 5.26g Vessel erosion, laceration, perforation
 - 5.26h Infection
 - 5.26i Steal syndrome
 - 5.26j Aneurysm and pseudoaneurysm
 - 5.26k Fistula/graft stenosis, thrombosis
 - 5.26l Underdeveloped fistula
 - 5.26m Access infiltration
 - 5.26n Recirculation
 - 5.26o Bleeding, hemorrhage, exsanguination
 - 5.26p High cardiac output failure

- 5.27 Describes the elements and implications of the hemodialysis prescription:
 - 5.27a Structure and characteristics of the dialyzer
 - 5.27b Composition of dialysate
 - 5.27c Frequency and length of treatment

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- 5.27d Blood flow and dialysate flow rate
- 5.27e Anticoagulation
- 5.27f Dialysate temperature
- 5.27g Dialysate conductivity
- 5.27h Ultrafiltration profiling
- 5.27i Sodium profiling
- 5.27j Dry weight
- 5.27k Vascular access

- 5.28 Describes the assessment of the hemodialysis client with respect to:
 - 5.28a Physical assessment
 - 5.28b Adequacy (e.g., Kt/V, PRU, etc.)
 - 5.28c Fluid volume balance
 - 5.28d Nutrition
 - 5.28e Metabolic status
 - 5.28f Immunologic and serologic status (e.g., hepatitis, HIV, etc.)
 - 5.29g MRSA/VRE status (e.g., antibiotic resistant organisms)
 - 5.29h Anemia
 - 5.29i Vascular access (AVE, AVG, CVC)
 - 5.28j Psychosocial response (e.g., coping, prescription adherence/fatigue, behaviour management issues, etc.)
 - 5.28k Education needs
 - 5.28l Pre, intra and post dialytic monitoring
 - 5.28m Failed kidney transplant

- 5.29 Describes the pathophysiology, assessment and nursing strategies for preventing and managing the following complications of hemodialysis:
 - 5.29a Disequilibrium syndrome
 - 5.29b Air embolism
 - 5.29c Hemolysis
 - 5.29d Bleeding, hemorrhage, exsanguination
 - 5.29e Blood leak
 - 5.29f Blood loss due to clotting
 - 5.29g Hypotension/hypertension

- 5.29h Cardiac events (e.g., dysrhythmias, angina, uremic pericarditis, arrest, etc.)
- 5.29i Muscle cramps/restless leg syndrome
- 5.29j Dialyzer reactions
- 5.29k Pyrogenic reactions
- 5.29l Infections
- 5.29m Chronic inflammatory response
- 5.29n Seizures
- 5.29o Psychosocial impact
- 5.29p Pain management

- 5.30 Identifies indications and interactions for commonly administered hemodialysis medications (e.g., anticoagulants, iron, etc.)
- 5.31 Identifies indications for commonly administered nutritional supplements (e.g., oral, intradialytic, etc.)
- 5.32 Develops, implements and evaluates the plan of care in collaboration with the hemodialysis client for:
 - 5.32a Vascular access management
 - 5.32b Prescription management (e.g., optimize fluid balance, blood pressure, medication, adherence, etc.)
 - 5.32c Nutrition management
 - 5.32d Infection control measures
 - 5.32e Identification and management of complications
 - 5.32f Managing dialysis schedule (e.g., transportation, adherence, finances, etc.)
 - 5.32g Equipment preparation (e.g., dialysate and extracorporeal circuit, etc.)

Nursing management of the client requiring acute therapy

The nephrology nurse...

- 5.40 Is aware of different therapies:
 - 5.40a Peritoneal dialysis
 - 5.40b Hemodialysis
 - 5.40c Plasmapheresis
 - 5.40d Continuous renal replacement therapy (e.g., CVVH, CAVH, etc.)

- 5.41 Describes the additional considerations with respect to therapies:
 - 5.41a Etiology (e.g., acute renal failure, overdoses, etc.)
 - 5.41b Access
 - 5.41c Age
 - 5.41d Co-morbidities (e.g., recent surgery, cardiac status, etc.)
 - 5.41e Available resources and expertise

Nursing management of the transplant client

The nephrology nurse...

- 5.50 Describes the principles of renal transplantation
- 5.51 Describes the potential contraindications for renal transplantation:
 - 5.51a Malignancy without sufficient time in remission
 - 5.51b Active sepsis or chronic infection
 - 5.51c Severe co-morbidities (e.g., cardiac, hepatic, pulmonary, vascular, active autoimmune, etc.)
 - 5.51d Cerebral vascular accident within 6 months
 - 5.51e Severe hyperparathyroidism, untreated
 - 5.51f Morbid obesity
 - 5.51g Non-adherence
 - 5.51h Ongoing substance abuse
 - 5.51i Unstable psychiatric status (i.e., non-adherence likely, informed consent not possible)
 - 5.51j Social and cultural issues (e.g., lack of resources, informed consent, etc.)
- 5.52 Describes the assessment of the transplant candidate:
 - 5.52a Chronic kidney disease stage and progression
 - 5.52b Clinical assessment and history (i.e., physical and psychosocial)
 - 5.52c Laboratory tests (e.g., ABO, HLA typing, antibody status, serology, etc.)
 - 5.52d Diagnostic tests (e.g., cardiac, radiologic, vascular, etc.)
 - 5.52e Education needs
- 5.53 Identifies transplant options available for chronic kidney disease clients:
 - 5.53a Living donor (related or unrelated)
 - 5.53b Deceased donor (single vs. double kidney, kidney-pancreas, etc.)

- 5.54 Describes the assessment of the potential living kidney donor with respect to:
 - 5.54a Clinical assessment and history (i.e., physical and psychosocial)
 - 5.54b Laboratory tests (e.g., ABO, HLA typing, antibody status, serology, etc.).
 - 5.54c Diagnostic tests (e.g., cardiac, radiologic, vascular, etc.)
 - 5.54d Education needs
 - 5.54e Follow-up and monitoring post-nephrectomy

- 5.55 Describes the pathophysiology, assessment and nursing strategies for preventing and managing the following complications of renal transplantation:
 - 5.55a Delayed graft function (e.g., acute tubular necrosis)
 - 5.55b Surgical complications (e.g., lymphocele, renal vein thrombosis, renal artery stenosis, urine leaks, hernias, etc).
 - 5.55c Rejection (i.e., hyperacute, acute and chronic)
 - 5.55d Immunosuppression-induced (e.g., infection, malignancy, etc.)
 - 5.55e Steroid-induced (e.g., cataracts, diabetes, psychosis, bone disease, etc.)
 - 5.55f Hyperlipidemia
 - 5.55g Hematologic and biochemical abnormalities
 - 5.55h Hypertension
 - 5.55i Sexual dysfunction
 - 5.55j Psychosocial impact

- 5.56 Identifies indications and interactions for commonly administered renal transplantation medications (e.g., azathioprine, cyclosporine, mycophenolate mofetil, tacrolimus, sirolimus, prednisone, antithymocyte globulin, basiliximab, gancyclovir, etc.)

- 5.57 Develops, implements and evaluates the plan of care in collaboration with the renal transplant recipient:
 - 5.57a Graft function
 - 5.57b Blood pressure management
 - 5.57c Diagnostics (e.g., bloodwork, biopsy, radiology, etc.)
 - 5.57d Medication management
 - 5.57e Immunosuppression
 - 5.57f Fluid management
 - 5.57g Nutrition management
 - 5.57h Identification and management of complications
 - 5.57i Education needs
 - 5.57j Psychosocial support

VI. Nursing Management of the Pediatric Client

The nephrology nurse...

- 6.1 Describes the etiology and pathophysiology of chronic kidney disease specific to the pediatric client:
 - 6.1a Congenital (e.g., malformations, obstructive, metabolic, etc.)
 - 6.1b Acquired (e.g., infectious, traumatic, neoplastic, rheumatologic, hemolytic uremic syndrome, etc.)
- 6.2 Describes the additional considerations for assessment of the pediatric client with chronic kidney disease:
 - 6.2a Growth and development
 - 6.2b Height to weight ratio
 - 6.2c Higher percentage of body water
 - 6.2d Family/caregiver involvement
 - 6.2e Education needs
- 6.3 Describes the additional manifestations and complications of chronic kidney disease specific to the pediatric client:
 - 6.3a Gastrointestinal (e.g., nausea, anorexia, infection, etc.)
 - 6.3b Genitourinary (e.g., sexual maturation, oliguria, polyuria, etc.)
 - 6.3c Neuromuscular alterations
 - 6.3d Metabolic (e.g., metabolic acidosis, etc.)
 - 6.3e Skeletal (e.g., osteodystrophy, fractures, etc.)
 - 6.3f Immunity (e.g., vaccinations, etc.)
 - 6.3g Psychosocial development
 - 6.3h Cognitive development
 - 6.3i Physical development (e.g., hormones, height, etc.)
- 6.4 Describes the additional considerations with respect to renal replacement therapies for the individual pediatric client:
 - 6.4a Growth and development
 - 6.4b Etiology and manifestations of chronic kidney disease
 - 6.4c Co-morbid conditions
 - 6.4d Family/caregiver involvement
 - 6.4e Social support (e.g., environment, community, etc.)
 - 6.4f Challenges (e.g., barriers to communication, type and frequency of complications, etc.)
 - 6.4g Access (hemodialysis, peritoneal dialysis)
 - 6.4h Complications with dialysis (e.g., hypothermia, etc.)

- 6.5 Identifies additional considerations for commonly used medications specific to the pediatric client with chronic kidney disease (e.g., dose, formulation, administration route, etc.)
- 6.6 Identifies additional considerations for commonly administered nutritional supplements specific to the pediatric client with chronic kidney disease.
- 6.7 Develops, implements and evaluates the plan of care in collaboration with the pediatric client.

VII. End-of-Life Issues

The nephrology nurse...

- 7.1 Recognizes potential ethical dilemmas:
 - 7.1a Decision to initiate/not initiate dialysis
 - 7.1b Withdrawal from dialysis
 - 7.1c Resuscitation decisions
- 7.2 Assesses client readiness to discuss end-of-life decision-making.
- 7.3 Supports and provides resources to the client regarding end-of-life decisions (e.g., advance directives, etc).
- 7.4 Develops, implements and evaluates the plan of care in collaboration with the client:
 - 7.4a Encourage advance directives
 - 7.4b End-of-life comfort measures (e.g., pain control, fluid management, spiritual or cultural beliefs, etc.)

VIII. Pharmacology

The nephrology nurse...

- 8.1 Identifies additional considerations for commonly used medications specific to chronic kidney disease:
 - 8.1a Indication
 - 8.1b Dosage adjustment
 - 8.1c Route
 - 8.1d Side effects
 - 8.1e Instructions for missed dose
 - 8.1f Dosing schedule
 - 8.1g Dialyzability
 - 8.1h Drug interaction
 - 8.1i Diet interaction

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- 8.2 Identifies classifications of medications commonly used by clients:
 - 8.2a Anti-infectives
 - i. Antimicrobials
 - ii. Antivirals
 - iii. Antifungals
 - iv. Vaccines
 - 8.2b Antineoplastics
 - 8.2c Anemia therapy
 - i. Erythropoietin stimulating agents
 - ii. Iron supplements
 - 8.2d Anticoagulants
 - i. Fibrinolytics
 - ii. Thrombolytics
 - 8.2e Cardiovascular
 - i. Antihyperlipidemics
 - ii. Antihyper/hypotensives
 - iii. Antiarrhythmics
 - iv. Antianginals
 - 8.2f Diuretics
 - 8.2g Dermatologic
 - i. Antihistamines
 - ii. Emollients
 - iii. Medicated dressings
 - iv. Wound and ulcer treatments
 - 8.2h Diagnostic and contrast media
 - 8.2i Endocrine
 - i. Insulin/hyperglycemic agents
 - ii. Hormones

- 8.2j Gastrointestinal
 - i. Antiemetics
 - ii. Acid secretion inhibitors
 - iii. Histamine receptor antagonists
 - iv. Proton pump inhibitors
 - v. Laxatives and stool softeners

- 8.2k Immunosuppressives
 - i. Calcineurin inhibitors
 - ii. Monoclonal antibodies
 - iii. Polyclonal antibodies
 - iv. Corticosteroids
 - v. Antiproliferatives

- 8.2l Vitamins
 - i. Water soluble
 - ii. Fat soluble

- 8.2m Bone metabolism
 - i. Phosphate binders
 - ii. Calcimimetics
 - iii. Vitamin D analogs
 - iv. Vitamin D

- 8.2n Central nervous system
 - i. Analgesics
 - ii. Antidepressants
 - iii. Anxiolytics
 - iv. Antineuroleptics
 - v. Hypnotics and sedatives
 - vi. Local anesthetics (e.g., subcutaneous, topical, etc.)

- 8.2o Electrolytes and minerals
 - i. Chelating agents
 - ii. Cation-exchange resins
 - iii. Potassium
 - iv. Minerals (e.g., calcium, magnesium, phosphate, etc.)

8.2p Nutritional supplements

- i. Enteral
- ii. Parenteral
- iii. Oral

8.2q Blood products

- i. Albumin
- ii. Packed red blood cells
- iii. IV Immune Globulin
- iv. Fresh frozen plasma
- v. Cryoprecipitate

IX. Adjunctive and complementary therapies

The nephrology nurse...

- 9.1 Is aware of the existence of adjunctive and complementary therapies (e.g., acupuncture, homeopathy, herbal therapy, etc.)
- 9.2 Identifies advantages and disadvantages in the use of adjunctive and complementary therapies specific to chronic kidney disease.
- 9.3 Engages in dialogue with the client regarding adjunctive and complementary therapies.

BIBLIOGRAPHY



Bibliography

Note: **All** references are important but **bolded** references were chosen by members of the Nephrology Examination Committee as “key references” for nurses preparing for the nephrology nursing certification examination.

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