Elimination Complexities

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Essential Questions

What are the normal functions of the renal, pancreatic, hepatic, biliary, and gastrointestinal systems?

What significant findings should the nurse look for when systems are not functioning normally?

What factors should be considered when assisting the patient's transition to independence?

What resources are available to assist patients as they recover?

Introduction

The renal, pancreatic, hepatic, biliary, and gastrointestinal systems are complex structures of elimination that are necessary for the maintenance of a healthy body. Internal disease processes and factors outside of the body can influence the functioning and balance of these life-sustaining systems. There are many disease factors that can affect function, such as substance abuse, genetics, family history, and poor lifestyle choices. Age-related differences can significantly influence assessment findings. Psychosocial, cultural, and spiritual support can impact the patient's transition to independence. In this chapter, health education for prevention of progression of disease and health restoration will be reviewed, and resources necessary to promote patient independence will be explored.

Pathophysiology

Normal Function

The kidneys filter the blood and directly affect every organ system. If kidney failure occurs without treatment, death will result. See Figures 3.1 and 3.2 for visualizations of the function and location of the kidneys.

Figure 3.1

Bodily Functions of the Kidney

Figure represents the kidneys and how they perform many functions, represented by symbolic graphic images: Bone indicates the function of metabolizing calcium and activation of vitamin D. Red blood cells indicate the production and release of erythropoietin, which stimulates the bone marrow to produce red blood cells. A blood pressure cuff indicates blood pressure control. A scale indicates acid-base-pH balance. A dinner plate with water glass indicates excretion of the body's waste products and overall fluid balance.

Figure 3.2

Kidney Location in the Body

The figure represents the location of the kidneys in the body using a skeletal view. The kidneys are located on each side of the rib cage between the 12th thoracic and 3rd lumbar vertebrae, and the lower two ribs on each side. The spleen is labeled above and behind the left kidney, and the liver above and behind the right. Both ureters are labeled as straw-like tubes coming out of the middle of each kidney. The pelvis is in place below the ureters.

The nephron, or functional unit of the kidney, is a tubular structure that filters and forms urine (see Figure 3.3). There are approximately one million nephrons in each kidney. Two kidneys and ureters, a urinary bladder, and urethra compose the urologic system (see Figure 3.4).

Figure 3.3

Structure of Nephron

The figure represents the structure of a nephron. A cross-section of the kidney is shown with the cortex, medulla, ureter, and renal pelvis labeled. An enlarged view of the nephron is provided with the renal vein in blue and the renal artery in red with blood flow directions labeled with arrows. The following components of the nephron are labeled: Bowman's capsule, glomerulus, efferent arteriole, cortex, medulla, afferent arteriole, proximal tubule, distal tubule, collecting duct, and loop of Henle.

Figure 3.4

Urologic System

The figure represents the urologic system. The kidneys, ureters, bladder, ureter openings, and urethra are labeled. The renal vein is blue and the renal artery is red.

The gastrointestinal tract is composed of a continuous pathway that includes the mouth, esophagus, stomach, small intestine, large intestine, rectum, and anus (see Figures 3.5, 3.6, and 3.7). Accessory organs needed for the digestion process include the liver, gallbladder, and exocrine pancreas (see Figure 3.5). The gastrointestinal tract breaks down food by mechanical and chemical means so that absorption of nutrients may occur.

Figure 3.5

Structures and Accessory Organs of the Digestion System

The figure represents a gray silhouette of a human body with the structures and accessory organs of the digestion system presented in color and labeled. The mouth, teeth, tongue, salivary glands, pharynx, epiglottis, esophagus, liver, gallbladder, exocrine pancreas, stomach, large intestine, small intestine, appendix, rectum, and anus are identified

Figure 3.6

Small Intestine

Figure represents the small intestine inside of the lower abdomen. The stomach and large intestine are faded. The small intestine is pink in color and fills in the area inside where the large intestine is. It is in a coil, tubular shape.

Figure 3.7

Large Intestine

Figure represents the large intestine with a shape that resembles a question mark. The different sections of the large intestine are labeled. The first one on the left at the top of the question mark is the appendix. Moving in a clockwise pattern, the ascending colon is next, followed by the transverse colon going across the top. Proceeding down is the descending colon, sigmoid colon, rectum, and then the anus at the very bottom.

Normal changes of the urinary system related to aging include a decrease of the kidney size and decreased elasticity or muscle tone of the ureter, bladder, and urethra, resulting in a weakening urinary sphincter, decreased bladder capacity, and retention of urine. Resulting symptoms can include stress incontinence, urinary frequency, dribbling of urine, urgency, and nocturia. Overactive bladder can occur as well, as an increase of bladder contractions are common with age. Gerontologic assessment findings may show a less palpable kidney with decreased creatinine clearance, and elevated serum creatinine and BUN. Drug excretions may be altered due to the decrease in kidney function, particularly the loop of Henle and renal tubules. The bladder may be palpable upon exam after urination if urinary retention has occurred. In males, prostate enlargement may cause urinary urgency, hesitancy, straining, frequency, retention, dribbling, and nocturia (Huether & McCance, 2012).

Normal changes of the gastrointestinal system related to aging include periodontal disease, and decreased salivary production, known as xerostomia, which can cause a dry mouth and difficulty swallowing. Aging adults often experience a decrease in the sense of taste and smell, resulting in a decreased appetite. Decreased food intake is often a concern for the aging adult. Motility of the gastrointestinal system seems to be affected with aging as well; resulting in decreased gastric emptying and constipation. A decreased production of stomach acid in aging adults may result in the decreased production of vitamin B12 and production of red blood cells causing anemia. Decreased liver size and gallstones are common. Decreases in sphincter control and production and secretion of digestive enzymes often occur (Huether & McCance, 2012). Table 3.1 identifies normal function of the renal, pancreatic, hepatic, biliary, and gastrointestinal systems.

Table 3.1

Normal Function of Systems

Renal

Excrete waste products from the body.

Extracellular fluid regulation.

Blood pressure control related to fluid balance.

Activate vitamin D.

Control acid-base balance.

Produce and secrete renin, which aids in blood pressure control.

Produce and release erythropoietin, which stimulates the bone marrow to produce RBCs.

Metabolize calcium.

Pancreatic

Endocrine pancreas produces glucagon and insulin to aid the formation and cellular uptake of glucose.

Exocrine pancreas secretes digestive enzymes that break down carbohydrates, proteins, and fats.

Hepatic

Metabolic function, including metabolism of carbohydrates, protein, and fat; detoxification of harmful substances; and steroid metabolism.

Bile production and secretion.

Storage of glucose, fat soluble vitamins (A, D, E, K), water soluble vitamins (B1, B2, folic acid, cobalamin), fatty acids, amino acids, and minerals (iron and copper).

Breakdown of RBCs, WBCs, and bacteria.

Biliary

Concentrate and store bile.

Gastrointestinal

Mechanical and chemical breakdown of food.

Secretion of enzymes to aid in digestion.

Salivary glands - Salivary amylase.

Stomach - Pepsinogen, hydrochloric acid, lipase, intrinsic factor.

Small intestine - Enterokinase, amylase, peptidases, aminopeptidase, maltase, sucrose, lactase, lipase.

Pancreas - Trypsinogen, chymotrypsin, amylase, lipase.

Liver/Gallbladder - Bile.

Absorption of nutrients.

Abnormal Findings

The nurse should be aware of the disorders that may result from the renal, pancreatic, hepatic, biliary, and gastrointestinal systems (see Table 3.2).

Table 3.2

Common Disorders

Renal

Chronic or Acute Renal Failure

Renal Calculi

Acute Tubular Necrosis

Glomerulonephritis

Hydronephrosis

Prostatitis

Benign Prostatic Hyperplasia

Cancer

Pancreatic

Pancreatitis

Cancer

Hepatic

Jaundice

Hepatitis

Cirrhosis

Cancer

Biliary

Cholelithiasis

Gastrointestinal

GERD

Hernias

Gastritis

Peptic Ulcer Disease

GI Bleeding

Malabsorption Syndromes

Inflammatory Bowel Disease

Appendicitis

Crohn’s Disease

Cancer

In children, there are many alterations in renal and bladder function that can be present, such as congenital malformations, glomerulus or bladder disorders, incontinence, Wilms tumor, and injury to the kidney. Congenital malformations of the kidney and urinary tract occur in approximately 1 of 500 births (Song, 2011). Malformations can range from minor to severe. In children, approximately 45% of kidney malformations cause renal failure (Allen, 2018).

Children can experience disorders of the gastrointestinal tract that are congenital, causing structure and motility impairments, impairments in absorption and digestion of nutrients, enzyme deficiencies, malformations of organs and structures, inflammatory disorders, metabolic disorders, and infection. These impairments can hinder normal growth and development in children (McCance & Huether, 2014).

Kidney function is measured by the glomerular filtration rate (GFR), which is typically obtained by a 24-hour urine test. The GFR is defined as the volume of blood filtered by the glomerulus over 1 minute (Isaac, 2012). Symptoms of chronic renal failure often do not appear until more than 75% of glomerular filtration is lost, and symptoms worsen as the kidney function decreases. Renal failure affects all body systems and can cause hyperkalemia, hypervolemia, peripheral edema, anemia, hyperphosphatemia, hypocalcemia, azotemia, metabolic acidosis, and peripheral neuropathy (Lewis, Heitkemper, Dirksen, O'Brien, & Bucher, 2007).

Pancreatitis, or inflammation of the pancreas, can be chronic or acute. Many patients experience worsening epigastric pain near the umbilicus. Acute pancreatitis causes severe, persistent abdominal pain in the midepigastric region. The pain typically begins after eating or drinking a large meal, or after consuming alcohol. Pancreatitis causes elevated white blood cell counts, serum amylase, and lipase levels. Liver function tests are often elevated. An enlarged pancreas is often seen on CT or ultrasound, often with cysts. Treatment is aimed at decreasing pain, maintaining circulation and fluid volume, and decreasing pancreatic secretions (Sargent, 2006).

Cirrhosis of the liver, which is irreversible, causes the collapse of the liver's structure. When the liver structure failure begins, jaundice, edema, ascites, and blood clotting disorders, along with metabolic disruption, develop (Fullwood & Purushothaman, 2014). Early signs and symptoms of cirrhosis include decreased appetite, nausea and vomiting, dull abdominal pain, jaundice, frequent bruising, constipation or diarrhea. Later signs can cause negative effects on several body systems, such as pulmonary edema, hypoxia, and mental changes (Huether & McCance 2014).

The best indicator of gallbladder dysfunction is the presence of fatty stools and serum amylase. Gallbladder obstruction produces elevated serum bilirubin, elevated urine urobilinogen levels, and an increase in fatty stools. Gallbladder inflammation can be noted with elevated serum leukocyte levels. Cholecystitis, which can be acute or chronic, causes the gallbladder to become inflamed, resulting in pain when stones are lodged in the cystic duct (Lewis et al., 2007).

Gastrointestinal disorders often exhibit similar signs and symptoms, such as pain, abdominal distention, fullness, bloating, dysphagia, indigestion, heartburn, weight loss, decreased appetite, diarrhea, constipation, bleeding, or mucus in stool. Disease processes along the GI tract can cause multiple metabolic effects, some of which may be life threatening.

Prevalent Problems

Chronic kidney disease is progressively irreversible and will result in loss of kidney function (see Figure 3.8 and Table 3.3). It typically develops slowly over months or years, and in stages. It is commonly caused by:

chronic glomerulonephritis,

polycystic kidney disorder,

hypertension,

nephrosclerosis,

renal calculi,

systemic lupus erythematosus,

nephrotoxins,

diabetic neuropathy,

chronic kidney infections, and

tuberculosis (McCance & Huether, 2014).

Figure 3.8

Stages of Chronic Kidney Disease

This chart presents the progression of Stages 1-5 of chronic kidney disease, providing the percent of kidney function and GFR for each stage. The GFR number indicates the degree of kidney function. As kidney disease worsens, the GFR number decreases.

Note. Adapted from "Glomerular Filtration Rate (GFR)" in the A to Z Health Guide, by the National Kidney Foundation, 2018.

Acute renal failure that is caused by impaired blood flow to the kidneys, or volume depletion, is referred to as prerenal failure. Impaired blood flow decreases the glomerular filtration rate, causing increased tubular reabsorption of water and sodium (Yaklin, 2011). Prerenal failure can be caused by the following disorders:

Severe vasoconstriction

Eclampsia

Disseminated intravascular coagulation (DIC)

Vasculitis

Malignant hypertension

Peripheral vasodilation

Antihypertensive drug treatment

Sepsis

Obstruction

Arterial embolism

Tumor

Arterial thrombosis

Venous thrombosis

Hypovolemia

Trauma

Shock

Hemorrhage

Diuretics

Dehydration

Severe burns

Cardiovascular abnormalities

Myocardial infarction (MI)

Heart arrhythmias

Heart failure

Cardiac tamponade

Cardiogenic shock (Yaklin, 2011).

Damage to the kidneys referred to as intrinsic kidney injury is caused by structural damage to the glomerulus, renal tubules, or vessels, causing cell necrosis, or by infectious agents and toxins that cause inflammation and injury (Yaklin, 2011). The following disorders are the most common causes of intrinsic renal failure:

Acute tubular necrosis caused by:

Crush injury to the body

Sepsis

Reaction to blood product transfusions

Nephrotoxins

Radiographic contrast media

Antibiotics such as gentamycin

Heavy metals

Anesthetics

Acute interstitial nephritis caused by exposure to nephrotoxic drugs:

Nonsteroidal anti-inflammatories

Antibiotics

Contrast-induced nephropathy occurs within 12-24 hours of a procedure using contrast. Risk factors include:

Age >70

Volume depletion

Repeated contrast exposure

Heart failure

Diabetes mellitus

Renal insufficiency (Yaklin, 2011; Isaac, 2012).

Damage to the kidneys referred to as postrenal kidney injury is caused by obstruction that increases the pressure within the kidney collection systems, decreasing the GFR, water and sodium reabsorption, and phosphaturia (Yaklin, 2011). The following disorders are the most common causes of postrenal failure:

embolus,

strictures,

renal calculi,

benign prostatic hypertrophy,

malignancies, and

pregnancy (Yaklin, 2011, p. 14).

Table 3.3

Systemic Effects of Acute Renal Failure and Signs to Watch For

Urinary

Respiratory

Hematologic

Cardiovascular

Decreased Urine Output

Oliguria

Proteinuria

Pulmonary Edema

Kussmaul Respirations

Pleural Effusion

Dry Mucous Membranes

Anemia

Leukocytosis

Volume Overload Resulting in Hypertension

Dysrhythmias

Pericardial Effusion

Tachycardia

Hypotension

Decreased Cardiac Output

Gastrointestinal

Neurologic

Metabolic

Nausea

Vomiting

Anorexia

Bleeding

Diarrhea

Seizures

Confusion

Lethargy Progressing to Coma

Increased BUN and Creatinine

Increased Potassium

Decreased Calcium, Sodium, Bicarbonate, and pH

Increased Phosphorus

Note. Adapted from Understanding Pathophysiology (5th ed.), by S. E. Huether & K. L. McCance, 2012, St. Louis, MO: Elsevier Mosby, pp. 1486-1490.

Cirrhosis is a chronic liver disease that causes progressive destruction of hepatic cells. Liver cells attempt to regenerate, but fibrotic regeneration occurs causing a distortion of the hepatic architecture (Horne, 2011). The overgrowth of fibrous cells creates a distorted liver lobular structure that impairs blood flow.

Four types of cirrhosis include:

alcoholic cirrhosis,

postnecrotic cirrhosis,

biliary cirrhosis, and

cardiac cirrhosis.

Typically, there are no early signs and symptoms of cirrhosis. Typical gastrointestinal complaints are common, such as flatulence, dyspepsia, nausea/vomiting, loss of appetite, and change in bowel patterns. Abdominal pain in the upper right quadrant often occurs, and the liver is often palpable. Late symptoms resulting from liver failure include jaundice, spider angioma skin lesions, splenomegaly, thrombocytopenia, leukopenia, anemia; and blood clotting disorders often occur. Because of changes in the liver structure from fibrous cell formations, portal hypertension and esophageal and gastric varices often occur, along with ascites and peripheral edema. Ascites is the accumulation of fluid in the peritoneal cavity, a frequent complication of liver failure (Fullwood & Purushothaman, 2014).

Pancreatitis, or inflammation of the pancreas, is a rare and serious condition. Pancreatitis can be chronic or acute, potentially life-threatening, and is diagnosed in approximately 17 of 100,000 people in the United States (Brown, 2008).

Common causes of pancreatitis include:

alcoholism (common in chronic pancreatitis),

peptic ulcers,

cholelithiasis or other obstructive disorders of the biliary tract,

abdominal trauma,

hyperlipidemia,

can be drug induced,

genetics, and

cystic fibrosis.

Symptoms of pancreatitis include:

epigastric and peri-umbilical pain that may radiate to the back is a classic symptom

fever,

shock,

nausea/vomiting, and

abdominal distension with small intestine ileus (Sargent, 2006).

Abnormal laboratory findings include elevated serum amylase and lipase. Elevated urinary amylase, hyperglycemia, hyperlipidemia, and hypocalcemia may also occur. Ultrasound and CT scans may be used to diagnose pancreatitis as well. Pancreatitis can recur, and each episode may further damage the cells of the pancreas related to production of insulin; therefore, diabetes may occur in patients with long-term pancreatitis (Hughes, 2004). The pancreas cannot be palpated because it lies beneath the stomach. Clinical signs and symptoms usually occur abruptly with sudden pain. If left untreated, renal failure, shock, sepsis, and multisystem organ failure may occur (Schlapman, 2001).

Check for Understanding

What are the components of the gastrointestinal tract that form a continuous pathway?

What accessory organs are needed to aid in digestion?

Identify normal changes in the gastrointestinal, renal, and urinary systems that are related to aging.

Identify disorders in the gastrointestinal, renal, and urinary systems that can be present in children.

Nursing Management

Nursing & Conceptual Frameworks

Nursing management should be provided in a holistic, individualized way. Patients with elimination complexities have specific nursing needs as well as individualized needs.

Nurses play a key role in the management of elimination complexities at initial presentation, during treatment, and upon discharge (Cunningham, Noble, Kadhum, Modhefer, & Walsh, 2016). For example, during initial presentation and treatment, critical care nurses are in an ideal position to identify risk factors and potentially nephrotoxic agents that pose a threat to patients' renal function. Interventional studies including contrast pose risk for contrast-induced nephropathy. Procedures such as computed tomography, cardiac catheterization, and pacemaker implantations all include injection of contrast medium that is toxic to the kidneys (Isaac, 2012). The nephrotoxic effects of contrast medium can increase patient morbidity and mortality (Isaac, 2012). Nurses play an important role in assessing for and preventing renal insult by determining the patient's baseline serum creatinine level, level of hydration, and nephrotoxic medications that may need to be adjusted. Postinterventional study serum creatinine levels should be monitored, along with patient teaching to report signs and symptoms of decreased renal function (Isaac, 2012).

Restoration of Function

Nursing & Conceptual Frameworks

The goal of nursing management in the care of patients with renal or gastrointestinal disorders is aimed toward restoration of function. Incorporation of nursing assessment, nursing diagnoses, planning, nursing implementation, and evaluation are all important steps in the process. Early identification of clinical manifestations of disease, utilization of collaborative care for treatment, and recognition of complications all play a major role in restoration of function of systems. Assessment of patients for predisposing and etiological factors that contribute to disease is of vital importance. Encouragement of patients to receive early treatment and interventions of identified disorders to prevent worsening of symptoms or recurrence of disease should be prioritized.

Important steps to promote restoration of function should be encouraged by the nurse during inpatient and outpatient care. Patients should comply with all prescribed regimens, including follow-up appointments, medications, therapies, dietary management, and activity restrictions. It is important for the patient and family to continue to educate themselves about the medical condition and disease processes. The nurse can provide credible sources for reading, such as websites, pamphlets, printed material, brochures, or books, and encourage questions at follow-up visits.

Transition to Independence

Nursing & Conceptual Frameworks

Nurses should be sensitive to the fact that many patients find the loss of independence during illness demoralizing. Patients' right to refusal of nursing care or assistance should be respected and patients' privacy and dignity must be maintained (Hughes, 2004).

The patient and family should be interviewed about the presence or history of illness and disease that may be related to renal or gastrointestinal disorders. Contributing factors that should be considered as patients transition to independence include, but are not limited to, genetic/family history of disease, history of alcohol use or abuse, obesity, smoking, hypertension, and recurrent kidney infections. Subjective data include past medical history, medications, and previous surgeries. Psychosocial, cultural, and spiritual considerations offer even greater insight into the patients' state of health. Certain cultural health disparities related to renal and gastrointestinal disorders should not be overlooked. Many symptoms, such as incontinence, for example, may go underreported because it is considered a social hygiene problem in some cultures, causing embarrassment (Lewis et al., 2007). Kidney stones, cancer, and other disorders have higher incidence in certain cultures because of higher incidence of genetic conditions in certain ethnic groups.

Information regarding functional health patterns can offer the nurse significant insight into the current and past state of health of patients. Functional health patterns include:

Health perception—values,

Nutrition/metabolic pattern,

Sleep/rest pattern,

Elimination pattern,

Activity/exercise pattern,

Cognitive/perceptual pattern,

Sensory/perception—self-concept pattern,

Role relationship pattern,

Sexuality/reproductive pattern, and

Coping

Health Promotion & Education

Patients experiencing illness such as end-stage renal disease, liver disease, and pancreatitis face adversity, as their treatment options are limited. Many are considering dialysis to treat renal disease, transplantation, or death. Encouraging resiliency or "the capacity of individuals to successfully maintain or regain their mental health in the face of significant adversity or risk" (Stewart & Yuen, 2011, p. 199) can enhance the patients' quality of life, which may be the most valuable nursing intervention that can be provided. Nurses have many opportunities to promote resilience, but the advantages of positive outcomes when intervening early in the process has proven beneficial. Stewart and Yuen (2011) related the following factors with resiliency:

Social support;

Coping skills, including spirituality;

Psychological factors, including self-esteem, optimism, acceptance of illness, determination, and self-efficacy; and

Factors related to physical illness, including adherence to treatment plan, quality of life, perception of illness, self-care, perception of pain, adherence to physical activity plan (Stewart & Yuen, 2011).

Nurses can encourage patients to improve or develop resiliency in the following ways:

Offer care and support during the acute phase of illness and provide resources for support when discharged, such as support groups.

Set high, but realistic, goals for recovery and independence.

Offer opportunities for the patient to develop and increase meaningful connections with others, such as attending support groups after being discharged.

Help the patient develop and maintain life skills and encourage physical and occupational therapy if prescribed.

Set clear boundaries when necessary so that the patient always feels safe and not overwhelmed.

Encourage patience with the healing process (Henderson, 2007; Ulrich, 2016).

Prevention and Health Promotion

Health Promotion & Education

Image depicts a serene landscape at sunrise, with the following Bible verse from Ephesians 3:20-21 provided in the glow of the sun's focused beams: &quot;Now to Him who is able to do exceedingly abundantly above all that we ask or think, according to the power that works in us, to Him be glory in the church by Christ Jesus to all generations, forever and ever. Amen.&quot;

Patient education is needed for prevention of future events, health restoration, avoidance of deterioration, and prevention of readmission. Providing patient education is an important part of transitioning the patient from acute or chronic illnesses to independence. In fact, lack of education can cause anxiety for some patients and their family members.

For example, a patient in acute renal failure has required multiple packed red blood cell transfusions to treat low hematocrit levels. The patient's family is overly anxious seeing the transfusions, assumes the patient is losing blood, and worries that the patient's condition must have worsened. When the nurse educates the patient and family that acute renal failure causes the lack of erythropoietin production, thus decreasing the body's production of red blood cells, they begin to understand the need for the packed red blood cell transfusions, and the patient and family's anxiety is resolved.

Educating patients and families throughout the disease process is good practice and may help to promote independence. The increased knowledge can assist patients and families in decision making related to their course of treatment. It is important to continue educating patients as they continue to recover by discussing causes of their disease and ways to prevent recurrence. Along with patient education, excellent communication skills are vital. The nurse should show empathy toward the patient and family and manage any anxieties in an empathetic and professional manner (Hughes, 2004).

Table 3.4

Important Health Promotion Considerations

Nutrition/Intake

Patients often have orders for dietary restrictions such as:

Pancreatitis: Often NPO for acute cases or high carbohydrate diet to decrease the stimulation of the exocrine pancreas.

Renal Disease: Renal diet with potassium and sodium restrictions. Often a high protein diet. Fluid restrictions are often ordered.

Cirrhosis: High calorie and high carbohydrate diet. Fluid and sodium restriction are often ordered for patients with ascites or edema.

Cholecystitis/Cholelithiasis: Low fat diet to decrease stimulation of the gallbladder.

Exercise/Mobility

Consider activity as ordered at applicable levels of prevention.

Medications

Patient may need assistance obtaining and maintaining prescriptions to prevent future medical events.

Post-Transplant

Concerns

Monitor for infection.

Importance of taking medications exactly at prescribed times.

Immunologic considerations.

Emotional support and patient education are essential.

Patients and families often require assistance in obtaining tools and services that are necessary to maintain independence during the chronic stages of care. When orders for equipment and other resources are received from the primary care provider, the nurse may request assistance from other collaborative care partners, such as social services, durable medical equipment companies, home health, hospice, or pastoral care, to meet the patients' needs. A few examples are listed in Table 3.5.

Table 3.5

Resources Necessary for Nonacute Care

Devices

Durable medical equipment, mobility equipment, oxygen, enteral feeding supplies, glucose monitoring system, peritoneal dialysis supplies.

Medications

Patient may need assistance obtaining and maintaining prescriptions to prevent future events.

Transportation

Dialysis treatment is often required multiple days per week, and assistance with transportation may be needed.

Living Conditions

Assistance with household activities may be needed. No smoking in homes with oxygen tanks.

Return to Employment Issues

Resources for rehabilitative time and modifications to previous workload may be needed. Fatigue may interfere with work performance.

Check for Understanding

What types of support processes are commonly available to patients with elimination complexities?

What is the goal of nursing management in the care of patients with renal or gastrointestinal disorders?

What contributing factors should the nurse consider as patients transition to independence?

What functional patterns exist that can provide the nurse insight into patients' current and past state of health?

Reflective Summary

There are many disease processes that affect the complex structures of elimination that are necessary for sustaining life. Today, individuals live longer than they used to, so many opportunities exist for nurses to improve care by offering psychosocial, cultural, and spiritual support that can impact patients' transition to independence. The key role that nurses offer in providing patients the resources necessary to promote independence, along with developing and encouraging resiliency, can increase patient quality of life. Educating patients regarding illness prevention, prevention of progression of disease, and health restoration has benefits for both patients and health professionals.

Key Terms

Ascites: Complication of liver failure causing accumulation of fluid in the peritoneal cavity.

Cholecystitis: Inflammation of the gallbladder that causes stone formation lodged in the cystic duct.

Chronic Kidney Disease: Progressively irreversible loss of kidney function.

Cirrhosis: Chronic liver disease that causes irreversible and progressive destruction of hepatic cells.

Glomerular Filtration Rate (GFR): Volume of blood filtered by the glomerulus over 1 minute; kidney function is measured by this.

Intrinsic Renal Failure: Damage to the kidneys caused by structural damage to the glomerulus, renal tubules, or vessels, causing cell necrosis, or by infectious agents and toxins that cause inflammation and injury.

Nephron: Functional unit of the kidney; tubular structure that filters and forms urine.

Pancreatitis: Inflammation of the pancreas can be chronic or acute.

Postrenal Failure: Damage to the kidneys caused by obstruction resulting in kidney injury from increased pressure within the kidney collection systems.

Prerenal Failure: Acute renal failure caused by impaired blood flow to the kidneys or volume depletion.

Resiliency: Positive adaptation to adversity.

Spirituality: Participation in organized religion, such as attending church, or nonreligious experiences such as personal reflection, yoga, or meditation.

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