

LINCOLN MEMORIAL UNIVERSITY
Caylor School of Nursing
Nursing 242/244
Spring 2010

LESSON PLAN: Nursing Strategies: Multisystem Organ Failure

DATES: See syllabus

TIMES: See syllabus

OBJECTIVES: Upon completion of this unit, the student will be able to demonstrate in clinical/campus laboratory setting, in individual and group conferences, and on written materials, the ability to:

1. Define and use the glossary terms as listed in the assigned readings.
2. Using the four adaptive modes of Roy's Adaptation Model (RAM), recognize human adaptive responses to behavior or stimuli when experiencing alterations in multisystem organ function.
3. Describe the significance of health education and preventive care in decreasing the incidence of multisystem organ failure.
4. Utilize the RAM nursing process to provide care for patients experiencing multisystem organ failure.
5. Define both acute and chronic renal failure and state the most common causes, clinical manifestations and nursing management.
6. Differentiate between the oliguric and diuretic phases of acute renal failure.
7. Identify appropriate community agencies and resources available for patients/families in renal failure.
8. Discuss the treatment options for the adult in chronic renal failure (CRF).
9. Discuss the psychosocial problems encountered by the dialysis patient and family.
10. Recognize indications for use, including advantages and disadvantages, for peritoneal dialysis, continuous ambulatory peritoneal dialysis, continuous cycle peritoneal dialysis and hemodialysis.
11. Utilize the RAM nursing process to provide care for adults undergoing peritoneal dialysis, continuous ambulatory peritoneal dialysis, continuous cycle peritoneal dialysis and hemodialysis.
12. Recognize and identify different dialysis access devices; i. e. shunt, fistulas.
13. Discuss dietary restrictions imposed on the patient in chronic renal failure and develop a teaching plan for a patient on a "renal diet".
Describe the role of the nurse in the pre- and postoperative management of a patient undergoing kidney transplantation.
14. Discuss the role of the nurse in organ procurement.
15. Utilize the RAM nursing process to provide care for the adult who is experiencing liver failure which creates the following problems:
 - a. ascites
 - b. edema
 - c. anorexia, nausea, vomiting
 - d. susceptibility to infection
 - e. susceptibility to drugs
 - f. change in body image
 - g. pruritus

- h. skin breakdown
 - i. hepatic coma
 - j. bleeding esophageal varices
 - k. bleeding tendencies
16. Relate the pathophysiology of viral hepatitis to the signs and symptoms from the prodromal period through the recovery phase.
 17. Compare and contrast the etiology, incubation periods and modes of transmission of type A, type B and type C hepatitis.
 18. State several actions which nurses may employ to protect themselves, as well as, members of the community and prevent the spread of types A, B and C hepatitis.
 19. Utilize the RAM nursing process to provide care for the adult who has either type A, B, C or drug-induced hepatitis.
 20. Describe the pathophysiology, clinical manifestations, complications, therapeutic and surgical management of acute and chronic pancreatitis.
 21. Utilize the RAM nursing process to provide care for the adult with acute or chronic pancreatitis.
 22. Utilize the RAM nursing process to provide care for adults experiencing shock.
 23. Describe shock and its underlying pathophysiology.
 24. Compare clinical findings of the compensatory, progressive, and irreversible stages of shock.
 25. Describe organ damage that may occur with shock.
 26. Describe similarities and differences in shock due to hypovolemic, cardiogenic, neurogenic, anaphylactic, and septic shock states.
 27. Identify medical and nursing management priorities in treating patients in shock.
 28. Identify vasoactive medications used in treating shock, and describe nursing implications associated with their use.
 29. Discuss the importance of nutritional support in all forms of shock.
 30. Discuss the role of nurses in psychosocial support of patients experiencing shock and their families.
 31. Identify properly the medications on the drug list by generic name, classification, mechanism of action, clinically significant side effects, normal dosage and nursing implications and be able to correctly calculate IV, IM and po dosages.

CLINICAL OBJECTIVES:

Upon completion of this unit, the student should be able to:

1. Use assessment parameters to determine the status of renal and urinary function.
2. Discuss the procedure for the various types of urine collection.
3. Adequately prepare and assess the patient for radiologic tests and endourologic procedures of renal and urinary function.
4. Adequately prepare, maintain and assess patients with catheters and closed urinary drainage systems.
5. Perform a nutritional assessment of assigned patient.
6. Provide preparation, teaching, follow-up care appropriate for GI diagnostic tests.
7. Assess assigned patient for psychosocial variables that could affect digestion, absorption and elimination.
8. Assess assigned patients for predisposing factors of gastric, liver, and biliary disease.

9. Develop a teaching plan for assigned patients with gastrointestinal disorders and/or liver disorders.
10. Identify the diagnostic tests for gastrointestinal and liver functioning.
11. Teach dietary management of assigned patients with gastric disorders.
12. Assess assigned patient for problems of bowel elimination.
13. Develop a teaching plan for patients with constipation/diarrhea.

TOPICAL OUTLINE:

- I. Renal Failure
 - A. Acute renal failure
 - B. Chronic renal failure
 - C. Dialysis
 1. Hemodialysis
 2. Peritoneal dialysis
 - D. Kidney Transplantation
 1. Preoperative management
 2. Postoperative management
- II. Nursing care of adults with common hepatic disorders
 - A. Physiological Overview
 1. Functions of the liver
 2. Diagnostic tests
 - B. Clinical Manifestations of Hepatic Dysfunction
 1. Jaundice
 2. Portal hypertension
 - a. Ascites
 - b. Esophageal varicies
 3. Hepatic encephalopathy and coma
 4. Vitamin deficiencies
 5. Pruritus
 - C. Care of patients with viral hepatitis (A, B, C)
 - D. Care of patients with fulminant hepatic failure
 - E. Care of patients with cirrhosis
 - F. Care of patients with cancer of the liver
 - G. Care of patients undergoing a liver transplant
 - H. Care of patients with liver abscesses
- III. Nursing care of adults with common pancreatic disorders
 - A. Physiological Overview
 - B. Nursing care of patients with acute pancreatitis
 - C. Nursing care of patients with chronic pancreatitis
 - D. Nursing care of patients with cancer of the pancreas
- IV. Shock and multisystem failure
 - a. Stages of shock
 - b. Shock states
 - i. Hypovolemic shock
 - ii. Cardiogenic shock
 - iii. Circulatory shock
 1. Septic shock
 2. Neurogenic shock
 3. Anaphylactic shock

REQUIRED READINGS:

Kee, J. L., Hayes, E.R., & McCuiston, L.E. (2009). *Pharmacology: A nursing process approach (Ed 6)*. St. Louis: Mosby. Ch 58, pp. 935-938.

Smeltzer, S.C., Bare, B.G., Hinkle, J. L., & Cheever, K. H. (2008). *Brunner & Suddarth's textbook of medical-surgical nursing. (Ed 11)*. Philadelphia: Lippincott Williams & Wilkins, Ch 15, 39, 40 (pp. 1358-1374), 44 (pp. 1521-1552, 1560-1563, 71, 72).

Wissmann, J. (Ed.). *Adult Medical –Surgical Nursing: Content mastery series review module (Ed 7.1)*. Kansas City, MO: Assessment Technologies Institute, LLC. Ch 42-43; 50; 63; 74-77.

MEDICATIONS:**Diuretics:**

(mannitol) Osmitol
(furosemide) Lasix
(ethacrynic acid) Edecrin

Medications for Renal Failure:

(sodium polystyrene sulfonate) Kayexalate
sodium bicarbonate
(calcium carbonate) Os-cal
(calcium acetate) Phos-Lo
(digoxin) Lanoxin
(dobutamine) Dobutrex
(erythropoietin) Epogen
Sorbitol
Albuterol
aluminum hydroxide
(sevelamer hydrochloride) Renagel
calcium gluconate
(diazepam) Valium
(phenytoin) Dilantin

Immunosuppressants:

(corticosteroids) Prednisone
(cyclosporine) Sandimmune, Neoral
(tacrolimus) Prograf
(mycophenolate mofetil) CellCept
(sirolimus) Rapamune
(antithymocyte globulin) Thymoglobulin

Ascites:

spironolactone (Aldactone)
furosemide (Lasix)

Esophageal Varices:

vasopressin (Pitressin)
octreotide (Sandostatin)
propranolol (Inderal)
nadolol (Corgard)

Hepatic Encephalopathy:

Lactulose (Cephulac)

Vasoactive meds**Sympathomimetics:**

Amrinone (Inacor)
Dobutamine (Dobutrex)
Dopamine (Intropin)
Epinephrine (Adrenalin)
Milrinone (Primacor)

Vasodilators:

Nitroglycerine (Tridil)
Nitroprusside (Nipride)

Vasoconstrictors:

Norepinephrine (Levophed)
Phenylephrine (New-Synephrine)
Vasopressin (Pitressin)

Meds for Anaphylactic shock:

Epinephrine
Diphenhydramine (Benadryl)
Albuterol (Proventil)

Hepatic Diagnostic Study Guide

1. **Liver Function Studies** – Table 39-1, pp. 1290-1291

2. **Ultrasound/CT/MRI of Liver:**

Purpose –

Patient Prep –

Procedure –

Post Care –

3. **Liver Biopsy:**

Purpose –

Patient Prep –

Procedure –

Post Care –

4. **Paracentesis** –

Purpose –

Patient Prep –

Procedure –

Post Care –

Hepatitis Handout

Type	Cause	DX	Preventable	Spread	S/S	TX	Complications
Hepatitis A	HAV	*PE *Hx of where pt has eaten or traveled *enlarged liver & spleen *HAV antibodies in serum after symptoms occur	YES, 1) Series of 2 vaccinations 2) Avoid eating food prepared in unsanitary conditions 3) Avoid raw/undercooked shellfish 4) Avoid water & uncooked foods in countries where HAV is prevalent Incubation = 15-50 days	1) Fecal/oral route (unsanitary conditions or restaurant employee who contaminates food) 2) Oral-anal sex	*Flu-like symptoms, *Anicteric (initially) *or NO symptoms	*Meds not indicated, usually clears on its own. *If outbreak of HAV, persons should get immune globulin within 2 weeks of exposure. *Bedrest, nutritional and fluid support	*Usually none
Hepatitis B	HBV	*PE *liver function tests *HBV antibodies in serum	YES- 1) Series of 3 vaccinations 2) Condoms 3) Gloves 4) Cover wounds 5) Sterilized needles such as tattoo needles, ear piercing needles 6) No sharing of razors, toothbrushes, manicuring tools, pierced earrings 7) Clean blood spills with 1:10 bleach soln 8) Screen blood donors 9) Vaccination of newborns, HCP, daycare workers Incubation = 28-160 days	*infected blood and other bodily fluids (semen, vaginal secretions, saliva, open sores, and breast milk) *Perinatal transmission	*Jaundice Light colored stool *Unexplained fatigue *Flu-like symptoms *Abd pain *Symptoms can occur 1-6 mths after exposure *Chronic Hep B = more severe fatigue, can progress to confusion & disorientation *May occur without symptoms	*Usually patient fights off infection within a few mths & develops immunity *Can become a carrier and have chronic Hep B TX- *immed tx with HepB vaccination *Hepatitis B immune globulin *Bedrest *Nutritional support *No alcohol *No acetaminophen *Chronic Hep tx-Interferon alpha and Epirvir	Increased risk for *Chronic hepatitis *Cirrhosis and/or *Hepatic cancer *Hep B can be transmitted to unborn infant *Carrier state possible

TYPE	CAUSE						
Hepatitis C	HCV	HCV antibodies in serum, Liver biopsy	<p>YES-</p> <p>1)Screen blood donors</p> <p>2)No needle sharing for illicit drug use</p> <p>3)Safe sex</p> <p>Incubation = 15-160 days</p>	<ul style="list-style-type: none"> * Sharing of needles *Accidental needlesticks of HCW *Transfusion of blood and blood products *Unprotected sex 	<ul style="list-style-type: none"> *Fatigue *Sore muscles *Headache *Widespread abdominal pain or pain in the RUQ *Nausea * Dark urine or light (clay-colored) stools *Loss of appetite *Weight loss *Aversion to fatty or high protein foods *Less commonly jaundice *Chronic-constant fatigue and malaise 	<ul style="list-style-type: none"> *Antiviral meds-interferon & ribavirin *No benefit from rest, diet or vitamin supplements 	<ul style="list-style-type: none"> *80% of persons infected become chronic Hep C *20% develop cirrhosis *1-4% develop liver cancer or liver failure *May require liver transplantation

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