

N392 HW Assignment 1

Thursday, June 13, 2013
3:39 AM

Sara Levy
N392 - Pediatric Nursing
Dr. Dobal
Long Island University

	Croup AKA Laryngotracheobronchitis	Asthma
Pathophysiology	Upper airway infection leading to edema and inflammation which cause constriction of the larynx, trachea, and bronchi. Croup can be viral or bacterial in nature and is usually referred to as laryngotracheobronchitis (LTB).	Lower airway inflammatory reactive airway disease which causes constriction of the of the bronchi and bronchioles . The airways become edematous and congested with mucous, which leads to air being trapped in alveoli. The inflammatory response is caused by exposure to tobacco smoke, allergens in the home (such as roach droppings & pet dander), air pollutants, food allergies, and recurrent viral respiratory infections.
Age	Most common in children age 6 months to 3 years, but found in children up to 8 years of age.	9% of children aged 0-17 have asthma.
Nursing Assessment	Hallmark: Expiratory bark that sounds like a seal barking with inspiratory wheezing (increased respiratory time) that sounds like stridor. - Child has usually been ill for a few days with signs and symptoms of respiratory distress with progression to cough and hoarseness. - May or may not have fever - Indications of more severe airway swelling include: ▫ Air hunger, cyanosis, fatigue ▫ Inspiratory stridor ▫ increased inspiratory time ▫ Barking cough ▫ Tachypnea RR up to 50/min ▫ HR up to 160 ▫ Severe retractions ▫ Low SpO2 - Altered mental status may indicate hypoxemia and potential respiratory	- Obtain family history of asthma and history of patient allergies. - Discern if home environment has pets or other allergens. - Has patient missed an increased number of school days in the past month? - Assess patient for tight non-productive cough. - Assess breath sounds for coarse expiratory wheezing/rales/crackles. - Other findings: ▫ Air hunger, cyanosis, fatigue ▫ RR up to 100 ▫ HR 180-200 ▫ Increased expiratory time ▫ Harsh cough ▫ Mild retractions / use of accessory muscles or head bobbing ▫ Flaring nares

	failure.	▫ Grunting ▫ Adventitious or absent breath sounds ▫ ABG changes: Decreased PO₂, Elevated PCO₂. ▫ Central cyanosis and/or pallor
Nursing Intervention	◇ * Top priority is maintaining a patent airway. ◇ Attach a cardiorespiratory monitor and pulse oximeter. ◇ Use stridor assessment scale ever 2-4 hours. ◇ Particular notice should be given to the child's: • Respiratory effort • Breath sounds • Preferred position • Responsiveness ◇ Note changes in behavior such as agitation or irritability (S&S of hypoxemia and respiratory failure). ◇ NOTE: Noisy breathing indicates adequate energy stores since breathing sounds diminish when child is fatigued. ◇ Raise HOB or allow child to sit upright. ◇ Establish a means of communication, such as sign language or simple word cues, to allow older patients to alert staff to respiratory difficulty. ◇ Supplemental oxygen with humidity treats hypoxemia. ◇ Keep resuscitation equipment at bedside. NOTE: Upper respiratory is the main area affected.	◇ * Top priority is maintaining a patent airway. ◇ Administer rapid-acting bronchodilators for an acute attack. ◇ Insert IV (if necessary) and maintain adequate hydration. ◇ Monitor ABGs. ◇ Administer nebulizer treatments as ordered. ◇ Monitor pulse oximetry readings. (Preferred reading is $\geq 95\%$) ◇ Educate and support patient and family. ◇ Goal of long term asthma treatment is to prevent future attacks using the least possible amount of medication. ◇ Put patient on cardiopulmonary and pulse oximetry monitors. ◇ Monitor patient's electrolytes. ◇ Promote rest and stress reduction. ◇ Give parents and family the option to assist with treatment. CPT - Used in LOWER airway disease. Postural drainage - Lowe airway treatment. NOTE: The lungs are affected by this disease process and that is why CPT and postural drainage are used.
Anticipatory Guidance Based on Developmental Age	Patient age 5 - Preschool ▪ Safety: Lock up medications, poisons, cleaning supplies, and guns. Make sure child wears a helmet while bike riding, roller skating etc. Also, make sure the parents have the child wear a seatbelt in the car. After the age of 4 and if the child weighs more than 40 lbs, the child should use a booster seat. ▪ Nutrition: Check child's lead levels and inform parents that food jags are	Patient age 5 - Preschool See anticipatory guidance to the left.

	common. Dental care is important. Have parents assist the child brush their teeth at least 2 times daily, and seek regular dental cleaning and check ups. ▪ Other: Suggest that parents consider the selection of nursery school/kindergarten for their child.	
Nutrition	• Child's fluid status will be compromised. Push fluids that are not carbonated or acidic. Popsicles are a great option. IVF may be necessary. • NOTE: Observe for difficulty swallowing which may be an early sign of epiglottitis or bacterial tracheitis.	• Push oral or IV fluids to maintain hydration. ▫ Monitor intake, output, and specific gravity to avoid over hydration if patient is on IV fluids.
Pharmacology	• Beta-agonists and beta-adrenergics (Ex. Albuterol, racemic epinephrine) <i>Route:</i> Aerosolized through face mask <i>Action:</i> Rapid acting bronchodilator which decreases bronchial and tracheal secretions and mucosal edema. • Corticosteroids (Ex. Dexamethasone) <i>Route:</i> IM, PO, nebulized budesonide <i>Action:</i> Anti-inflammatory used to decrease edema with a long half of life of 36-54 hours.	• Short acting beta2-agonists (SABA) <i>Albuterol, levalbuterol, pirbuterol</i> <i>Route:</i> Metered dose inhaler (MDI) or nebulizer <i>Action:</i> Relaxes smooth muscle resulting in bronchodilation and mucous clearing within 5-10 minutes. [Acute therapy] • Corticosteroids <i>Methylprednisolone, prednisone, prednisolone</i> <i>Route:</i> Oral <i>Action:</i> Used for short periods of time to compliment beta2-agonists. Contributes to the diminishment of inflammation and mucous. [Acute therapy] • Anticholinergic <i>Ipratropium</i> <i>Route:</i> MDI or nebulizer <i>Action:</i> Decreases secretions and inhibits bronchoconstriction. [Acute therapy] • Long-acting Beta2-agonists (LABA) <i>Salmeterol, formoterol</i> <i>Route:</i> Dry powder inhaler (DPI) <i>Use:</i> Used as a daily preventative medicine for exercise induced asthma and nocturnal use. Relaxes smooth muscles. • Inhaled corticosteroids (ICS) <i>Beclomethasone, budesonide, flunisolide, fluticasone, mometasone, triamcinolone</i> <i>Route:</i> MDI or nebulizer <i>Use:</i> Daily control meds

		• Methylxanthines <i>Theophylline</i> Route: Oral Use: Daily control • Mast cell inhibitors <i>Cromolyn sodium, nedocromil</i> Route: MDI or nebulizer Daily • Leukotriene receptor antagonist (LTRA) <i>Montelukast, zafirlukast</i> Route: Oral
Lab Values	Monitor ABGs. • PCO2 NML: 32--48 mmHg • Bicarb NML: 22-29 mmol/L • pH NML: (6-12mo) 7.27 - 7.49 • O2 saturation: 95-99%	cont. Note: the concern in both upper and lower respiratory airway disease is respiratory acidosis, which can lead to respiratory failure.
Activities Based on Developmental Age	Preschool children enjoy associative play with puzzles, nursery rhymes, and songs. Dramatic play can be expressed through dress- up, dolls, doll clothes, play houses, puppets etc. Stress is relieved through arts and crafts projects such as the use of pens/crayons, scissors, glue, and paper. Cognitive development is fostered through books, educational television shows, interactive computer games and music. (Con. ->)	(Con.) Further activities include self care tasks such as dressing and brushing teeth (while supervised).
Special Precautions	When preparing for discharge, instruct parents to contact the physician if: ▫ Mild symptoms do not resolve after exposure to cool night air or air conditioning. ▫ The child's breathing is rapid and labored. ▫ If the child does not drink enough liquids resulting in decreased urine output.	Instruct patient and family in the use of a peak expiratory flow meter and emphasize that when the PEFM rate is only 50% or less of patient's best then the patient should go directly to the emergency room.

References

- Boyd, D. (2011). *HESI Comprehensive Review for the NCLEX-RN Examination*(3rd ed., pp. 219-221). St. Louis, MO: Elsevier.
- Ball, J., Bindler, R. M., Cowen, K. J., & Ball, J. (2012). *Principles of pediatric nursing: Caring for children* (5th ed., pp. 763-766). Boston: Pearson.

N392 HW Assignment 2

Friday, June 14, 2013
12:29 AM

Sara Levy
N392 - Pediatric Nursing
Dr. Dobal
Long Island University

	Right Sided CHF (systemic)	Left Sided CHF (pulmonary)
Pathophysiology	Ex1. Patent ductus arteriosis (PDA). The higher pressure gradient in the left side of the heart causes blood to be shunted to the lungs (increased pulmonary blood flow) through the PDA. This increased blood flow to the lungs increases pulmonary vascular resistance causing a system wide backup of blood causing right sided CHF.	Ex2. Aortic stenosis. The narrowed aortic valve causes an obstruction to systemic blood flow which leads to congestion in the left ventricle which in turn decreases systemic blood flow and eventually left sided CHF.
Nursing Assessment	History - Assess for the following: ▫ Hear disease in close family member ▫ Teratogen exposure ▫ Chromosomal anomaly ▫ FTT/poor weight gain ▫ Murmurs ▫ Difficulty breathing/Respiratory infections ▫ Cyanosis and/or fatigue ▫ Recent strep infection (could lead to murmurs, endocarditis etc.) Physical Assessment: - Inspect: ▫ Growth chart percentile ▫ Activity level ▫ Clubbing of finger ▫ Chest shape ▫ Color/pallor ▫ RR and ease ▫ S&S of edema (i.e. fluid status) ▫ Sweating ▫ Exercise intolerance ▫ Skin mottling ▫ JVD - Palpate and Percuss: ▫ Pulse amplitude ▫ Capillary refill ▫ Chest	Same as box to left except that in Left sided CHF, or pulmonary CHF, findings would also involve the lungs. Common S&S include: ▫ Tiring with feeding and play ▫ Irritability ▫ Wheezing ▫ Retractions ▫ Nasal flaring ▫ Crackles ▫ Tachypnea ▫ Cough ▫ Grunting

	▫ Abdomen (check for ascites and hepatomegaly) 3. Auscultate: ▫ HR ▫ Heart rhythm ▫ Character of sounds	
Nursing Intervention	◇ Improve cardiac function through adherence to pharmacological treatment. ◇ Remove accumulated fluid with the use of diuretics - both potassium sparing and regular ◇ Decrease cardiac demands through rest and positioning. (Knee to chest position is used, particularly during a tet spell) • Plan activities and feeding schedule with time for rest as needed. ◇ Maintain appropriate growth and development pattern. ◇ Teach patient and parents about correct methods of taking medications, particularly digoxin. ◇ Hydrate patient. (PO or IV as needed) ◇ Protect skin	◇ Same box to left. ◇ If airway is compromised ensure the O2 is ready as needed.
Anticipatory Guidance Based on Developmental Age	3 year old patient - Pre-Schooler <u>Safety:</u> the child must ALWAYS wear a seatbelt and sit in a car seat until at least the age of 4. Secure dangerous items such as guns, knives, medicines, and poisons. When bike riding the child should wear protective gear, particularly a helmet. (Continued ->)	(con.) <u>Nutrition:</u> Inform parents that food jags are common. Also, be sure to screen child for lead poisoning at Dr.'s checkup (could be due to pica). <u>Other:</u> Stress the importance of dental care and regular dental appointments as well as the importance of nursery school selection/school preparation.
Nutrition	▪ Anticipate high calorie feeding with supplementation as needed. Patient may require TPN. ▪ Maintain adequate hydration.	▪ Anticipate high calorie feeding with supplementation as needed. Patient may require TPN. ▪ Maintain adequate hydration while closely monitoring lungs.
Pharmacology	• Digoxin (Lanoxin) • Furosemide (Lasix) • Thiazides (Diuril) • Spironolactone (Aldactone) • ACE inhibitor • Propranolol (Inderal) • Carvedilol (Coreg)	Same as box to left.
Lab Values	▪ Monitor for hypokalemia. • NML: 3.3-4.6 mmol	➤ S&S of hypokalemia: - Abnormal heart rhythms

	▪ Monitor fluid and electrolyte imbalances. (see HW 1 Lab values section for detailed information about electrolyte ranges.) ▪ Monitor specific gravity • NML: 1.01 - 1.03 ▪ Monitor liver function labs • AST NML: 0-60 IU/L • ALT NML: 0-50 IU/L	(dysrhythmias), especially in people with heart disease. Constipation, fatigue, muscle damage (rhabdomyolysis), muscle weakness or spasms, paralysis (which can include the lungs). [1]
Activities Based on Developmental Age	Pre-school children enjoy simple games, puzzles, nursery rhymes and songs. Dramatic play can be expressed through dress- up, dolls, doll clothes, play houses, puppets etc. Stress is relieved through arts and crafts projects such as the use of pens/crayons, scissors, glue, and paper. Cognitive development is fostered through books, educational television shows, interactive computer games and music. (continued ->)	(con.) Further activities include self care tasks such as dressing and brushing teeth (while supervised).
Special Precautions	CHF family teaching is a priority, particularly as it is related to medication administration and the need for emotional and financial support. Also, the patient must be closely monitored for appropriate growth and cognitive development. (continued ->)	Digoxin administration requires special instructions: • Give as instructed. • Do not mix with other foods. • Do not give a missed dose or makeup dose. S & S of toxicity: ➤ Frequent vomiting, poor feeding, slow heart rate -> NOTIFY physician.

References

Boyd, D. (2011). *HESI Comprehensive Review for the NCLEX-RN Examination*(3rd ed., pp. 219-221). St. Louis, MO: Elsevier.

Ball, J., Bindler, R. M., Cowen, K. J., & Ball, J. (2012). *Principles of pediatric nursing: Caring for children* (5th ed., pp. 763-766). Boston: Pearson.

[1] <http://www.nlm.nih.gov/medlineplus/ency/article/000479.htm>

N392 HW Assignment 3

Friday, May 24, 2013
4:39 PM

Sara Levy
N392 - Pediatric Nursing
Dr. Dobal
Long Island University

	Esophageal Atresia with a Transesophageal Fistula (TEF)	Pyloric Stenosis
Pathophysiology	A congenital anomaly resulting in a partially formed esophagus. Most commonly involves the upper trachea forming a blind pouch while the lower esophagus is connected to the trachea. Medical Emergency.	Hypertrophy of the pyloric sphincter to twice it's usual size causing a narrowing or closure of the pyloric canal. Causes: Oral erythromycin is a possible cause though many cases are linked to a familial history.
First notice symptoms?	Immediate newborn period. (I.e. max 48hrs.)	Symptoms manifest after 2 to 8 weeks, though projectile vomiting after 14 days of life is common.
Nursing Assessment	Classic symptoms in newborn: 1. Choking 2. Coughing 3. Cyanosis Excessive salivation/drooling, possible sneezing, respiratory distress, aspiration pneumonia. Possible distended abdomen.	Hallmark: Projectile Vomiting - Vomit is ejected up to 3 feet from infant. Usually occurs in first born males. Manifests as dehydration with metabolic imbalances and decreasing/smaller stools. NOTE: Generally the infant has a palpable olive shaped mass in URQ and visible peristaltic waves. Also, assess for dehydration in fontanel, mucous membranes, urinary output, and skin turgor. Child is usually hungry and irritated - exhibiting signs of general discomfort.
Nursing Intervention	A. Preoperative care * Top priority is maintaining a patent airway. 1. Monitor respiratory status 2. Continuous suction of blind pouch 3. Elevate HOB to 30 degrees 4. Provide O2 as prescribed 5. Maintain NPO status 6. Administer IV fluids as prescribed 7. Administer IV antibiotics as prescribed. 8. Good Prognosis.	A. Preoperative care * Top priorities: fluid and electrolyte needs, minimize weight loss, promote rest/comfort, prevent infection, and provide parental support. 1. Assess for dehydration 2. Administer IV fluids and electrolytes as prescribed. 3. Weigh daily 4. Monitor I&O (weigh diapers) 5. If prescribed, administer small, frequent feedings. 6. Prepare family for surgery.

	B. Postoperative care 1. Maintain NPO 2. Administer IV fluids & antibiotics. 3. Monitor I&O 4. Provide TPN or tube feedings as prescribed. 5. Monitor for postoperative stricture of the esophagus. a. Poor feeding b. Dysphagia c. Drooling d. Regurgitating undigested food	(hypertrophied muscle will be split.) 7. Swaddle baby to provide comfort and maintain warmth. 8. Excellent prognosis. B. Postoperative care 1. Continue IV fluids as prescribed. 2. Administer analgesics to control pain. 3. Provide small oral feedings with electrolyte solutions or glucose (usually 4 to 6 hours post surgery). 4. Position on right side in semi-fowler position after feeding. 5. Burp frequently (prevents distention and stress on surgical sight). 6. Weigh daily/monitor I&O. 7. Monitor incision. Monitor temperature q4 hrs.
Anticipatory Guidance	- Monitor for weight gain, growth and developmental achievements. - Home safety, expected sleeping patterns and positions, sibling rivalry if applicable. - Infant should always be securely seated in car seat while driving.	- Monitor for weight gain, growth and developmental achievements. - Home safety, expected sleeping patterns and positions, sibling rivalry if applicable. - Infant should always be securely seated in car seat while driving.
• Developmental Age	1 mo old - Infant - Provide pacifier to meet developmental needs. - Promote parent infant bonding - particularly for high risk infants. - Encourage parents to hold child frequently.	Same as box to left.
• Nutrition	- Teach parents about gastrostomy tube care and feedings if necessary.	- Provide small oral feedings with electrolyte solutions or glucose (usually 4 to 6 hours post surgery) - Usually discharged on full strength formula or breast feeding within 24 hours of surgery.
• Pharmacology	- IV antibiotics (unspecified).	
• Lab Values		• Decreased sodium (NML 134-143 mmol/L) ➤ S&S of hyponatremia: - Nausea and vomiting, headache, confusion, loss of energy, fatigue, restlessness

and irritability, muscle weakness, spasms or cramps, seizures, unconsciousness, coma . [3]

- **Decreased** potassium (3.3-4.6 mmol/L)

- S&S of hypokalemia
 - Abnormal heart rhythms ([dysrhythmias](#)), especially in people with heart disease.
 - Constipation, fatigue, muscle damage ([rhabdomyolysis](#)), muscle weakness or spasms, paralysis (which can include the lungs). [4]

- **Decreased** serum chloride (96-110 mmol/L)

- Hypochloremia causes:
 - Metabolic Alkalosis**
 - Diarrhea
 - Vomiting
 - Respiratory losses
 - Gastric suction (NG Suction)
 - Hyponatremia**
 - Adrenal Insufficiency (Addison's Disease)
 - Renal Failure
 - Edematous states –**
 - Congestive Heart Failure
 - Pseudohyponatremia
 - Salt-losing nephritis
 - Excessive IV fluids during hospitalization
 - Excessive sweating
 - Burns [5]

- Metabolic alkalosis:

1. **Increased** pH (0-6 mo NML 7.18-7.51)
2. **Increased** bicarbonate (NML 22-29 mmol/L) OR CO₂ (infant NML 27-41 mmHg).

- S&S of Metabolic alkalosis:
 - Headache and lethargy are early symptoms; warm flushed skin; seizures; mental confusion; muscle twitching; agitation; coma (severe acidosis); anorexia, nausea, vomiting and diarrhea; deep and rapid respirations (Kussmaul respirations);

		hyperkalemia (shift of acid to the ICF and K ⁺ to the ECF); cardiac dysrhythmias. [6]
• Activities	Infants rely heavily on interaction with primary care provider to meet their needs and establish trust. For the infant age birth to 1 month, activities such as : • Comfort through touch • Stimulation with black and white geometric images • Tummy and back play • Interactive play with caregiver (Ex. Allow child to follow stuffed animal that is in the infant's direct line of vision.) Are all appropriate activities that will encourage proper development.	Activities for infant aged 2 weeks to 2 months: • Same as box to left • 2 month old babies can hold rattles or toys, so give the baby rattles to hold. • By 4 months the baby can follow objects 180 and looks for sounds and voices, so the primary care provider should promote this type of interaction.
• Special Precautions	- Teach parent to monitor incision for signs of infection. - Monitor for postoperative stricture of the esophagus	- Teach parent to monitor incision for signs of infection. - Position on right side in semi-fowler position after feeding. - Burp frequently (prevents distention and stress on surgical sight).

References

Boyd, D. (2011). *HESI Comprehensive Review for the NCLEX-RN Examination*(3rd ed., pp. 219-221). St. Louis, MO: Elsevier.

Ball, J., Bindler, R. M., Cowen, K. J., & Ball, J. (2012). *Principles of pediatric nursing: Caring for children* (5th ed., pp. 763-766). Boston: Pearson.

[3] Pasted from <<http://www.mayoclinic.com/health/hyponatremia/DS00974/DSECTION=symptoms>

[4] Pasted from <<http://www.nlm.nih.gov/medlineplus/ency/article/000479.htm>>

[5] Pasted from <<http://healthooze.com/hypochloremia/>>

[6] Pasted from <<http://www.m2hnursing.com/ABG/etiology.php>>

N392 HW Assignment 4

Friday, June 21, 2013
5:10 PM

Sara Levy
N392 - Pediatric Nursing
Dr. Dobal
Long Island University

	Nephrotic Syndrome	Acute Glomerulonephritis (AGN)
Pathophysiology	Nephrotic Syndrome is not defined by any one clinical state. It is characterized by • Edema • Massive proteinuria • Hypoalbuminemia • Hypoproteinemia • Hyperlipidemia • Altered immunity In nephrotic syndrome the glomerulus becomes overly permeable allowing for the loss of protein in the urine, which leads to a drop in albumin serum levels (as well as albumin in the blood), which in turns lowers the osmotic pressure in the capillaries and leads to massive edema.	AGN is an immune-complex disease where antibody-antigen complexes are deposited in the glomerular membrane which leads to edematous glomeruli. This edema occludes the capillary lumen which alters the GFR and elevates the BUN and creatinine and possibly BP as well. Note: The most common cause of AGN is untreated strep or impetigo. Some patient s with AGN have nephrotic syndrome as well.
Nursing Assessment	• History • Physical Assessment - Expected findings: ▪ Weight gain ▪ 3+/4+ protein in urine ▪ Edema in the: ▫ Face ▫ Abdomen ▫ Scrotum ▪ Decreased urine output ▫ Expect high s.g. ▪ The following remain within normal limits: ▫ BP ▫ BUN ▫ Creatinine ▫ Creatinine filtrate rate • Abnormal lab findings. (See lab section for details.)	• History of strep infection • Labs: ▪ Increased ASO (antistreptolysin O titers) ▪ Increased BUN ▪ Increased Creatinine • Physical findings: ▪ Edema ▫ Facial edema (peri-orbital) ▫ <i>Some</i> generalized dependent edema ▪ Hematuria ▪ <i>Some</i> proteinuria ▪ Oliguria (decreased urine output) ▪ Lethargy ▪ Pallor ▪ Possible flank pain ▪ Possible severe hypertension
Nursing Interventions	• Administer ordered steroids • Weigh patient daily at the same time with no/minimal clothing	• Administer antibiotics as ordered. • Monitor fluid status. • Monitor I&O.

	• Measure abdominal girth ▪ Checking for retained fluids • Check urine for protein ▪ High s.g. indicates retained water. • Monitor urine specific gravity • Diet: ▪ High protein ▪ Low fat • Monitor patient for signs and symptoms of infection	• Monitor electrolyte status. • Monitor BP ▪ Severe hypetension as high as 200/120 mmHg can occur. ▪ In the event of HTN assess for CNS problems, such as blurred vision, headaches, N/V, decreased LOC, seizures and convulsions. • Check urine for protein and blood. • Patient may need temporary dialysis. • Bed rest during acute phase.
Anticipatory Guidance Based on Developmental Age	7 year old patient - School Age <u>Safety</u>: Child should ALWAYS wear a helmet when riding a bike, rollerblading, skateboarding etc. Child should use a booster seat until at least 8 years old. All windows should have guards, and certainly dangerous weapons such as guns should be locked away. <u>Nutrition</u>: Involve child in food preparation. Healthy eating habits of the family as a unit helps children maintain healthy eating habits. (Con. ->)	7 year old patient - School Age (Con.) <u>Health Care</u>: Provide appropriate dental care, particularly since child is starting to grow adult teeth, and provide vision testing. <u>Other</u>: Encourage group activities such as group sports, clubs, after school activities, or extracurricular opportunities.
Nutrition	• Avoid foods high in fats since triglyceride and cholesterol levels tend to be high. • Despite low fat diet the patient still needs to consume a high calorie diet in order to conserve protein. • Low sodium intake is necessary to prevent edema due to fluid accumulation.	• Low calorie diet • Low protein • Treats severe azotemia (accumulation of nitrogenous waste in the blood) • Low sodium • Moderate salt treats edema and HTN. • Low potassium • Fluid restrictions (to prevent hypervolemia - i.e. fluid overload) • Calcium supplement • Vitamin B supplement
Pharmacology	• Corticosteroids ▪ IMPT: Monitor patient closely for possible side effects such as: - Moon face - Increased appetite - Hair growth - Abdominal distention - Mood swings ▪ Adverse effects: ◇ Hypertension ◇ Nausea ◇ Hyperglycemia ▪ Warning: Taper corticosteroids.	• Diuretics & Antihypertensive ▪ <i>Ex. Furosemide</i>- Treats edema. • Antibiotics ▪ Treats the lingering strep infection.

	Do <i>not</i> stop use suddenly. Ex. Prednisone withdrawal symptoms include: Sever fatigue, weakness, body aches, joint pain. [3] • Albumin ▪ Monitor patient for signs of volume overload (hypervolemia), such as hypertension, which is a sign of fluid shifts. • Diuretics ▪ Warning: monitor child for signs of shock when diuretics are being used.	
Lab Values	Monitor protein in urine, albumin, blood protein levels, and lipids. Expected findings include: • Massive proteinuria: 3+/4+ ➤ S&S: No early signs and symptoms. Urine may appear foamy in toilet. Later signs include edema in the hands, feet, and scrotum. Urinalysis is needed to confirm proteinuria. [1] • Hypoalbuminemia: < 3.2 - 4.7 g/dL ➤ As mentioned before, the massive proteinuria, leads to a drop in albumin serum levels (as well as albumin in the blood), which in turns lowers the osmotic pressure in the capillaries and leads to massive edema. • Hypoproteinemia: < 5.9–8.0 ➤ S&S: Leads to edema - facial, abdominal & scrotal • Hyperlipidemia: ▪ Total Cholesterol: >200 mg/dL ▪ HDL: Greater than 35 mg/dL ▪ LDL: 130 mg/dL and higher ➤ S&S: Asymptomatic. Blood work is needed to detect the problem. [2]	The main focus in AGN is to monitor the fluid electrolyte balance and renal functioning. Expected abnormalities include: • Elevated BUN ▪ > 5-17 mg/dL ✧ Indicates renal damage. • Elevated Creatinine ▪ > 0.2-0.8 mg/dL ✧ Indicates renal damage. • Monitor electrolytes for the following imbalances [4]: ▪ Hyperkalemia (high potassium): ○ 3.3-4.6 mmol/L ○ S&S: Muscle fatigue, weakness, paralysis, abnormal heart rhythms, nausea [5] ▪ Hyperphosphatemia: ○ >2.5-6.5 mg/dL ○ S&S: Asymptomatic. Diagnosed through blood work.
Activities Based on Developmental Age	• Activities that foster gross motor movement involve biking, skiing/snowboarding, ball sports, dance lessons and skating. • Activities that foster a sense of industry include starting collections, playing board and video games, learning to play a musical instrument	(Activities cont.) • Activities that foster cognitive growth include crafts, reading, school work, and word puzzles.

	and starting hobbies.	
Special Precautions	Patient and parent teaching is essential as patient is at risk for recurrence of illness. Patient should monitor for early signs and symptoms of Nephrotic syndrome. ➤ S&S: See pathophysiology section for review of signs and symptoms.	AGN may take weeks or even months to fully resolve. Discharge planning should focus on medication regimen and dietary restrictions and S&S of complications, particularly hypovolemia and severe HTN (see pathophysiology and nursing assessment sections for more details).

References

Boyd, D. (2011). *HESI Comprehensive Review for the NCLEX-RN Examination*(3rd ed., pp. 219-221). St. Louis, MO: Elsevier.

Ball, J., Bindler, R. M., Cowen, K. J., & Ball, J. (2012). *Principles of pediatric nursing: Caring for children* (5th ed., pp. 763-766). Boston: Pearson.

- [1] <http://kidney.niddk.nih.gov/kudiseases/pubs/proteinuria/#symptoms>
- [2] <http://www.mayoclinic.com/health/high-blood-cholesterol/DS00178/DSECTION=symptoms>
- [3] <http://www.mayoclinic.com/health/prednisone-withdrawal/AN01624>
- [4] <http://rnspeak.com/medical-surgical-nursing/acute-glomerulonephritis-agn-nursing-intervention/>
- [5] <http://www.mayoclinic.com/health/hyperkalemia/MY00940/DSECTION=when-to-see-a-doctor>