

Medications

AccuNeb/albuterol sulfate: Adrenergic, bronchodilator. The patient was given this medication to ease the workload of breathing and relax the airway passages due to acute respiratory failure. Key nursing assessments include oxygen saturation, heart rate, and respiratory rate (Nurse's Drug Handbook, 2021).

Erythromycin: Macrolide, Antibiotic. The patient was on this medication to treat conjunctivitis in both eyes. Key nursing assessments include checking for a history of allergies to macrolide antibiotics or hepatic dysfunction and monitor for diarrhea and vomiting (Nurse's Drug Handbook, 2021).

Demographic Data

Admitting diagnosis:

Acute respiratory failure with hypoxia

Psychosocial Developmental Stage: Trust vs. Mistrust

Age of client: 19 weeks

Sex: Male

Weight in kgs: 6.8 kg

Cognitive Development Stage: Appropriate for developmental age

Allergies: No known allergies

Date of admission: 6/10/2022

Admission History

The patient, a 19-week-old infant with a history of prematurity and pyloric stenosis, was brought into the emergency department by his parents for worsening cough symptoms, congestion, labored breathing, and a fever. The mother stated they tried to treat the cold at home for 3-4 days with home remedies like nasal suctioning and warm baths, but they provided no relief. As the infant's breathing became more labored, they decided to seek medical attention. In the ED, the infant appeared hypoxic and was administered a high-flow nasal cannula at 4L. A respiratory panel was performed and came back positive for enterorhinovirus and parainfluenza.

Pathophysiology

Disease process: Acute bronchiolitis is the acute onset of inflammation in the bronchioles typically caused by viruses such as RSV or rhinovirus. It is a common lower respiratory tract infection that causes inflammation to the lining of the epithelial cells in the small airways, resulting in mucous production, cellular necrosis, and wheezing (Erickson et al., 2022). It is the most common lower respiratory infection in children less than two years of age (Erickson et al, 2022). The patient was at an increased risk for developing this illness due to being premature and having an underdeveloped immune system.

S/S of disease: Initial symptoms of this illness include nasal congestion, poor appetite, cough, sneezing, pharyngitis, and rhinitis (Holman et al., 2019). As the illness worsens, tachypnea, retractions, and wheezing can develop (Erickson et al., 2022). The patient exhibited symptoms of increased workload of breathing, wheezing, subcostal retractions, increased mucus production, and fever.

Method of Diagnosis: The method of diagnosis used for this patient was a respiratory panel, which showed positive results for enterorhinovirus and parainfluenza 3. Clinical diagnosis includes a physical examination, directed history, and nasopharyngeal swabs to detect the specific respiratory virus that is causing the bronchiolitis (Friedman et al., 2018).

Treatment of disease: Treatment options include hydration, suctioning, hypertonic saline nebulization, supplemental oxygen, intubation, or mechanical ventilation (Erickson et al., 2022). The patient was being treated with suctioning as needed, albuterol treatments, and oxygen supplementation.

Assessment										
General	Integument	HEENT	Cardiovascular	Respiratory	Genitourinary	Gastrointestinal	Musculoskeletal	Neurological	Most recent VS (highlight if abnormal)	Pain and Pain Scale Used
Alertness: Awake,	Skin color: Patient's	Head/Neck: Head	Heart sounds: Regular S1 and S2 sounds	Increased respiratory effort observed. Mild	Color: Yellow Character: Clear Quantity of	Diet at home: Formula Current diet:	Neurovascular status: Oriented	MAEW: Upper and	Time: 1600 Temperature:	rFLACC scale: Score: 0
Relevant Lab Values/Diagnostics			Medical History				Active Orders			
Respiratory panel: Enterorhinovirus: Positive -Normal value=negative Parainfluenza virus 3: Positive -Normal value=negative Chest x-ray: This diagnostic procedure was performed to rule out a diagnosis of pneumonia in the infant. The chest x-ray came back normal. No other labs/imaging were completed.			Previous Medical History: Prematurity at 34 weeks, pyloric stenosis Prior Hospitalizations: The patient was hospitalized following a laparoscopic pyloromyotomy (2/27/2022). Past surgical history: Laparoscopic pyloromyotomy (2/2022) Social needs: N/A				-Vital signs Q2Hs to monitor patients' oxygen saturation and respiratory rates due to current bronchiolitis symptoms such as increased respiratory effort and wheezing -Isolation Precautions: Contact/Droplet due to the current infection of enterorhinovirus/parainfluenza and to prevent the spread of infection -Continuous pulse oximetry to keep the O2 Sat above 90% and titrate as needed to promote optimal oxygenation due to prior hypoxic state -Provide suctioning as needed to maintain patent airway and prevent the risk of aspiration, provide frequent repositioning to aid in loosening up secretions and prevent worsening of symptoms -If the infant is sleeping and experiences a brief desat of 20 seconds or less, do not administer supplemental oxygen. Try repositioning first. This is to allow the infant to continue at his baseline oxygenation levels without becoming dependent on supplementation.			
and taken care of.	normal for age Rashes: None observed Bruises: None observed Wounds: None observed	tongue was pink, moist, and without lesions. Ears: Not able to observe. Nose: Mild secretions observed. Eyes: The patient's eyes exhibited PERRLA. Sclera	radial and pedal pulses are 2+ bilaterally Capillary refill: Normal, fingertips blanched white in less than 2 seconds	These symptoms align with characteristic of worsening bronchiolitis (Erickson et al., 2022).	Pain, Mass etc.: Abdomen is soft, non-tender to palpation, no masses detected Distention: No distention present Incisions: No incisions present Scars: No	Capillary refill was less than 2 seconds. ROM: Upper and lower extremities bilaterally are equal in strength Strength: Upper and lower extremities	lower extremities bilaterally are equal in strength Orientatio n: Patient was alert, awake, and orientated to caregivers Mental Status: Alert and Orientated Speech: N/	Oxygen saturation: 93% Oxygen needs: 2L via nasal cannula optiflow		

		<p>appeared white.</p> <p>Inflammation and drainage in conjunctiva bilaterally</p> <p>Teeth: No teeth, gums were pink and moist</p>				<p>scars present</p> <p>Drains: None</p> <p>Wounds: No wounds present</p>	<p>bilaterally are equal in strength</p>	<p>A</p> <p>Sensory: Intact</p> <p>LOC: Patient was alert and oriented to parents</p>		
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<p>Nursing Diagnosis 1</p> <p>Ineffective airway clearance related to secretions as evidenced by adventitious breath sounds (Doenges et al., 2019).</p>	<p>Nursing Diagnosis 2</p> <p>Impaired gas exchange related to hypoxia as evidenced by nasal flaring and dyspnea (Doenges et al., 2019).</p>	<p>Nursing Diagnosis 3</p> <p>Ineffective breathing pattern related to increased work of breathing as evidenced by subcostal retractions (Doenges et al., 2019).</p>
<p>Rationale</p> <p>This nursing diagnosis was chosen and prioritized first due to the student and nurse</p>	<p>Rationale</p> <p>This nursing diagnosis was chosen due to the patient consistently displaying an increased</p>	<p>Rationale</p> <p>This nursing diagnosis was chosen due to the patient demonstrating subcostal retractions</p>

<p>auscultating adventitious breath sounds in all lung lobes during the assessment.</p>	<p>workload of breathing and nasal flaring during the shift.</p>	<p>throughout the shift.</p>
<p style="text-align: center;">Interventions</p> <p>Intervention 1: Assess airway and auscultate breath sounds. Note adventitious breath sounds such as wheezes or crackles.</p> <p>Intervention 2: Maintain the patient’s airway by suctioning the airway as needed and removing excess secretions.</p>	<p style="text-align: center;">Interventions</p> <p>Intervention 1: Administer oxygen supplementation as ordered via nasal cannula and titrate as needed.</p> <p>Intervention 2: Assist with respiratory treatments such as albuterol nebulizers, suctioning, and chest physiotherapy.</p>	<p style="text-align: center;">Interventions</p> <p>Intervention 1: Evaluate respiratory function, noting rapid or shallow respirations, dyspnea, “air hunger”, cyanosis, and changes in vital signs.</p> <p>Intervention 2: Assess respiratory rate and depth. Note the use of accessory muscles, and retractions. Note position of trachea.</p>
<p style="text-align: center;">Evaluation of Interventions</p> <p>Goal met: The infants airway remained clear of secretions after suctioning and the infant appeared less distressed. The patient displayed no signs of aspiration and an increased ease of breathing after suctioning.</p>	<p style="text-align: center;">Evaluation of Interventions</p> <p>Goal Met: The patient’s oxygen saturation stayed within normal range with 2L of oxygen supplementation via nasal cannula. The patient responded well to the albuterol treatment and displayed no adverse effects.</p>	<p style="text-align: center;">Evaluation of Interventions</p> <p>Goal met: The patient’s respiration rate decreased and breathing became less labored. The patient displayed no signs of cyanosis or “air hunger”. No tracheal tugging was observed.</p>

References (3):

Capriotti, T. (2020). *Davis advantage for pathophysiology: Introductory concepts and clinical perspectives*. F.A. Davis.

Carle Foundation Hospital (2022). *Reference range (lab values)*. Urbana, IL.

Doenges, M. E., Murr, A. C., & Moorhouse, M. F. (2019). *Nursing care plans: Guidelines for individualizing client care across the life span*. F.A. Davis Company.

Erickson, E., Bhakta, R., & Mendez, M. (2022, March 22). *Pediatric bronchiolitis*. National Center for Biotechnology Information. Retrieved June 17, 2022, from <https://www.ncbi.nlm.nih.gov/books/NBK519506/>

Friedman, J. N., Rieder, M. J., Walton, J. M. (2018). Bronchiolitis: Recommendations for diagnosis, monitoring, and management of children one to 24 months of age. *Pediatrics & Child Health*, 19(9), 485–498. <https://doi.org/10.1093/pch/19.9.485>

Holman, H.C., Williams, D., Sommer, S., Johnson, J., Wheless, L., Wilford, K., & McMichael, M. G. (2019). *RN nursing care of children review module* (11th ed.). Assessment Technologies Institute, LLC.

Jones & Bartlett Learning. (2021). *Nurse's Drug Handbook* (20th ed.).

