Demographic Data:

Admitting Diagnosis – Rhinovirus/acute bronchiolitis

Age of Client – 18 months

Sex – Female

Weight in kgs – 9.76 kg

Allergies – No Known Allergies

Date of Admission – 11/05/2025

Admission History:

The patient was brought to the ER by their mother who brought them in due to a concern for the increase in work the patient had to do to breathe. The mother states that the symptoms began on 11/4 and that nebulizer treatments were given at home throughout the night, but that they brought no relief of symptoms. Upon arrival at the ED on the morning of 11/5 the patients O2 stats were in the 70's and they were given Decadron. The patient was also placed on a heated humidified trach collar which improved their breathing. No fever, vomiting, or diarrhea reported, and the patient is tolerating their regular diet well.

Medical History:

Previous Medical History – bronchopulmonary dysplasia, subglottic stenosis, tracheobronchial malacia, developmental delay, alteration in nutrition, anemia of prematurity (28 weeks), covid-19, MSSA colonization, respiratory failure of newborn, slow feeding of newborn

Prior Hospitalizations – slow feeding of newborn, respiratory failure of newborn, prematurity (28 weeks), palliative care by specialist, newborn affected by IUGR, MSSA colonization, covid-19, anemia of prematurity, alteration of nutrition

Past Surgical History – tracheostomy, g-tube placement

Social Needs – This patient is 18 months old with developmental delays, and because of this they will need 24-hour monitoring and care.

Note: Shortly after bedside report was given on 11/6 the patient had an episode of coughing that was accompanied by an increase of sounds coming from their tracheostomy that caused a concern for decannulation. The patient also experienced an episode of post-tussive emesis accompanied by decannulation. The emesis combined with the decannulation resulted in a brief compromise of the airway; the patient continued to de-stat and ultimately became pulseless. Approximately 30 seconds of CPR were provided followed by ROSC while respiratory therapy suctioned and replaced her trach. After achieving stability, the trach was changed from a 4.0 uncuffed to a 4.0 cuff incase respiratory support was required; the patient tolerated this change well.

Medications:

Acetaminophen (Tylenol) – 160 mg/5ml, oral liquid (administered through gastric tube), PRN for pain

Class:

Pharmacological – analgesic, antipyretic

Therapeutic – non-opioid analgesic

Assessments – before giving Tylenol to this patient assess airway patency, baseline vitals, respiratory sounds, work of breathing, and that the trach tube is secure with suctioning equipment nearby.

Acetaminophen (Tylenol) – 120 mg, rectal suppository PRN for pain

Class:

Pharmacological – analgesic, antipyretic

Therapeutic – non-opioid analgesic

Assessments - before giving Tylenol to this patient assess airway patency, baseline vitals, respiratory sounds, work of breathing, and that the trach tube is secure with suctioning equipment nearby.

Albuterol Sulfate (Proventil)– 2.5 mg/3ml (0.083%), inhalation, PRN for shortness of breath

Class:

Pharmacological – short acting beta2 agonist

Therapeutic – bronchodilator, anti-asthmatic

Assessments – before giving albuterol sulfate to this patient assess work of breathing, respiratory sounds, airway patency, cough effectiveness and O2 saturation.

Clindamycin (Cleocin) – 97.5 mg oral solution (administered through gastric tube), every eight hours

Class:

Pharmacological – antibiotic

Therapeutic – antibiotic

Assessments – before giving clindamycin to this patient assess allergy history, bowel sounds, baseline vitals, location type and severity, and review CBC and liver lab results.

Relevant Lab Values/Diagnostics:

Ph – 7.419 (7.310-7.410)

PCO2 – 36.4 mmHg (41.0-51.0)

PO2 – 85.9 mmHg (35.0-45.0)

Lactate – 2.04 mmol/L (0.50-2.0)

A chest x-ray was performed and provided evidence suggestive of a viral process reactive to airway disease

Pathophysiology:

Disease Process – Rhinovirus is a common viral pathogen and the top cause of the common cold in children. Rhinovirus is contracted when the virus enters the body through the inhalation of respiratory droplets or when the host encounters contaminated surfaces, after which the virus attaches itself to the epithelial cells in the host's nasal mucosa (Capriotti, 2020). After the virus attaches to the nasal epithelial cells it begins to replicate within them and causes cellular damage which triggers the release of inflammatory mediators like histamines (Capriotti, 2020). Rhinovirus poses a significant threat in children because of the smaller diameter of their airway which is more easily affected by the inflammation; this child is particularly susceptible

to symptoms because of the neurological damage they experience from their gangliosidosis (Capriotti, 2020).

S/S of Disease: Rhinovirus causes nasal congestion, rhinorrhea, sore throat, cough, otitis media, sinusitis, asthma exacerbation and a low-grade fever in some cases (Capriotti, 2020).

Method of Diagnosis – Respiratory Pathogen Panel

Treatment of Disease – There is no specific cure for rhinovirus, and treatment focuses on relieving symptoms with adequate rest, hydration, and over the counter medications (acetaminophen, ibuprofen, saline drops, decongestants, and cough suppressants) (Capriotti, 2020).

Active Orders:

Contact/droplet isolation

Feeding continuous (g-tube) 40ml/h,

Vital signs Q2

Notify MD if patient shows persistent worsening signs of instability (pediatric respiratory score 9-12),

High flow nasal cannula panel 97%, I&O per protocol

Assessment:

General – Patient is awake and responsive with no signs of distress.

Integument – Skin is warm, dry, and intact with no lesions, sores, or rashes noted. The patient has had a tracheostomy tube and a g-tube placed, but both insertion sites have healed without issue.

HEENT – Nasal congestion noted upon observation; unable to examine the inner ears and throat.

Cardiovascular – Clear S1 and S2 present, no murmurs or defects noted. Tachycardia noted, capillary refill <2 seconds bilaterally, peripheral pulses +2 bilaterally.

Respiratory – Tachypnea, respiratory distress, nasal flaring, intercostal muscle use and retractions noted on inspiration and expiration, wheezing, rhonchi, and course breath sounds also noted.

Genitourinary – Urine clear and yellow.

Gastrointestinal – Gastrostomy tube in place, bowel sounds normo-reactive in all four quadrants. No distention, pain, or cramping noted.

Musculoskeletal – The patient can move all extremities well but cannot pull themselves up from supine position due to developmental delays.

Neurological – The patient is awake and alert. Nonverbal. Developmental regression is present.

Most Recent Vital Signs –

BP: 113/58

RR: 34

O2: 100% on two liters of oxygen administered via nasal cannula

Temp: 36.4 C

Apical Pulse: 135

Peripheral Pulse: 135

Pain and Pain Scale Used – This patient is nonverbal, but no signs of pain (such as grimacing) were noted upon observation.

Nursing Diagnosis 1: Ineffective airway clearance

Rationale – related to increased mucus production and inflammation caused by rhinovirus as evidenced by coarse breath sounds, visible tracheostomy secretions, and increased work of breathing.

Interventions –

1: Suction tracheostomy as needed

2: assess breath sounds and oxygen saturation frequently

Evaluation of Interventions – airway remains patent, respiratory sounds improved

Nursing Diagnosis 2: Impaired gas exchange

Rationale – related to airway inflammation and altered ventilation-perfusion ratio as evidenced by tachypnea, nasal flaring, retractions, and intercostal muscle use

Interventions –

1: Monitor respiratory status continuously

2: administer bronchodilators as ordered

Evaluation of Interventions – clear breath sounds and adequate oxygenation were maintained bilaterally

Nursing Diagnosis 3: Risk for infection

Rationale – related to the presence of invasive devices as evidenced by the presence of a tracheostomy and gastrostomy tube

Interventions –

1: Monitor for signs of infection

2: Teach parents and care providers how to properly care for device insertion sites using aseptic techniques

Evaluation of Interventions – the patient's invasive devices do not lead to an infection

Erickson's Psychosocial Developmental Stage: Autonomy vs. Shame and Doubt

In this stage children are learning to operate independently and will begin trying to feed and dress themselves, as well as saying "no" more; they are eager to explore but also seek reassurance often.

Piaget's Cognitive Developmental Stage: Sensorimotor

Children in this stage are learning through sensory exploration and motor activity. They understand object permanence and begin imitating others.

What do you expect: I would expect a child in these stages to be pulling themselves up from sitting independently, walking with minimal support, have a vocabulary of about twenty words, and use simple phrases.

What did you observe: This patient has developmental delays and is unable to support themselves in anyway, speak, or feed themselves.

Age-appropriate growth and developmental milestones:

1. Most 18-month-olds can walk independently; this patient cannot due to developmental delays.

2. Most 18-month-olds can make use of a small 10–20-word vocabulary; this patient cannot due to developmental delays.

3. Most 18 month olds can turn pages in a book or stack blocks, this patient cannot because of developmental delays.

Age-appropriate diversional activities:

1. Soft toys with no removable plastic pieces.

2. Sturdy board books.

3. Musical, light-up toys with no small, removable parts.

References:

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