RDS (Respiratory Distress Syndrome)

Setting: Inpatient  Population: NICU  Keywords: hyaline membrane, prematurity, respiratory

Clinical Description

Care of the hospitalized infant experiencing early onset of pulmonary insufficiency in the delivery room or within 6 hours of birth, caused primarily from a surfactant deficiency that is characteristic in premature infants.

Key Information

- Early surfactant replacement and noninvasive positive pressure should be used to reduce the need for intubation and invasive positive pressure ventilation.
- LISA (less invasive surfactant administration) or INSURE (intubate, surfactant, extubate) is preferred due to improved outcomes.
- The use of inhaled nitric oxide is only supported by evidence when pulmonary hypertension is present.
- A practical approach, such as work of breathing and oxygen needs assessment, should be used to diagnose RDS to allow for surfactant and noninvasive positive pressure strategies that reduce the need for intubation.

Clinical Goals

By transition of care

A. The patient will demonstrate achievement of the following goals:

- Effective Oxygenation

B. Patient, family or significant other will teach back or demonstrate education topics and points:

- Education: Overview
- Education: Self Management
- Education: When to Seek Medical Attention

Correlate Health Status
Correlate health status to:

- prenatal and birth history, comorbidity, congenital anomaly
- gestational age, corrected age, day of life
- sex
- baseline assessment data
- physiologic status
- response to medication and interventions
- barriers to accessing care and services
- family/caregiver:
  - developmental level
  - health literacy
  - cultural and spiritual preferences
- safety risks
- social determinants of health
- family interaction
- plan for transition of care

RDS (Respiratory Distress Syndrome)

Signs/Symptoms/Presentation

- breath sounds abnormal
- cyanosis
- lung compliance decreased
- lung/airway resistance increased
- minute volume demand increased
- oxygen index increased
- oxygen requirement increased
- PaO2/FiO2 ratio decreased
- work of breathing increased

Vital Signs
CARE PLANNING  
CPG IP RDS NICU  
Setting: Inpatient  
Population: NICU

- heart rate increased
- respiratory rate increased
- blood pressure increased or decreased
- SpO2 (peripheral oxygen saturation) decreased

Laboratory Values

- ABG (arterial blood gas) abnormal
- PaO2 (partial pressure of arterial oxygen) decreased

Diagnostic Results

- CXR (chest x-ray) abnormal

Problem Intervention(s)

**Optimize Oxygenation, Ventilation and Perfusion**

- Provide surfactant using the least invasive method of delivery.
- Provide respiratory support using noninvasive positive pressure, such as CPAP (continuous positive airway pressure) or bilevel CPAP; monitor the need for intubation.
- Avoid wide, rapid variations in PaO2 and PaCO2, including prolonged hyperoxia.
- Use lung protective ventilation strategy, such as volume targeted ventilation, low volume strategy ventilation and PEEP (positive end expiratory pressure).
- Promote early extubation to avoid further ventilator-induced lung injury.
- Consider sedation to manage ventilator asynchrony and refractory hypoxemia.
- Anticipate the need for adjunctive therapy, such as selective use of neuromuscular blocking agent, high-frequency ventilation, inhaled nitric oxide and extracorporeal life support.

Associated Documentation

- Airway/Ventilation Management (Infant)
General Education

- admission, transition of care
- orientation to care setting, routine
- advance care planning
- diagnostic tests/procedures
- opioid medication management
- oral health
- medication management
- pain assessment process
- safe medication disposal
- tobacco use, smoke exposure
- treatment plan

Safety Education

- call light use
- equipment/home supplies
- fall prevention
- harm prevention
- infection prevention
- MDRO (multidrug-resistant organism) care
- personal health information
- resources for support

Education: Overview

- description
- signs/symptoms

Education: Self Management
• home care
• infection prevention
• provider follow-up

Education: When to Seek Medical Attention

• unresolved/worsening symptoms

References


