

NURSING CARE OF THE CHILD IN RESPIRATORY DISTRESS

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Respiratory distress in a child is an emergency, requiring a well-prepared health team and nurse is a part of it. Knowledge of the specificities of the respiratory tract and breathing in children and the ability to observe well are crucial in identifying the deterioration on time and enable the planning of nursing activities as observation, suction, oxygen and inhalation therapy to improve child condition.

Descriptors: OBSERVATION, ANATOMICAL AND PHYSIOLOGICAL FEATURES, CHILD, NURSING, BREATHING

Introduction

Respiratory distress in a child is defined as a state of difficulty or altered breathing and respiratory failure is a condition when the exchange of gases in the lungs is insufficient for the body's metabolic needs despite the organism's compensatory mechanisms (Grošelj Grenc, 2017). It develops as a result of various respiratory diseases and/or diseases of respiratory system (Grosek, 2014). Risk factors for the serious course of the disease are: prematurity, low birth weight, illness during the first three months of life, chronic respiratory and cardiac diseases, neuromuscular diseases, and immune deficiencies (Krivec, 2014). Other conditions are less likely to cause respiratory distress, but they must be known and thought of as a possible cause of a child's breathing problems. These include lung

disease, cardiovascular disease, neurological disease, metabolic and endocrinological causes, hematological disease and gastrointestinal tract disease (Furman and Grošelj Grenc, 2016). The incidence of respiratory distress in children is inversely proportional to their age. Infants and young children typically develop respiratory distress and respiratory failure faster than larger children or adults, as they differ in important immunological, anatomical and physiological characteristics. They are more prone to infections for which adults have acquired immunity (Grošelj Grenc, 2015). Nurses need to be well aware of some of the anatomical and physiological features of childhood, as these affect the plan and activities of nursing care.

Observation, measurements and
assessment of the child's condition

A careful assessment of the condition to determine who is at risk of respiratory distress and/or respiratory failure is required. Severe respiratory distress

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can progress immediately to failure, while mild and moderate respiratory distress progressively gradually over several hours or days. Severe respiratory distress, or respiratory failure, is a life-threatening condition that can lead to death immediately or within minutes, unless action is taken on time (Grosek, 2014). Assessment of the condition should be further enhanced by identifying the needs of the emerging child because of this condition (Oštir, 2013). Respiratory distress is recognized by evaluating respiratory effort, breathing efficiency and respiratory effects on other organ systems. This approach to recognizing respiratory distress is widely used because of its simplicity and systematic nature (Grošelj Grenc, 2015).

Oxygen and inhalation therapy

Children with respiratory distress are always provided with oxygen. How adequate oxygenation will be provided depends on the situation and the degree of respiratory distress. The specificities of oxygen targeting in a child are related to the anatomical and physiological features that are specific to a child's age. The oxygen target in % hemoglobin saturation (SaO₂ or SpO₂) is: 95-97% of children and adolescents, 88-92% in all newborns (preterm or 28 days old) (Khadawardi and Hazzani, 2013) and above 60% in cyanotic heart disease (individual according to the clinical condition of the child) (Wong, Elliott, 2009; Royal childrens hospital Melbourne, 2013). Treatment with high flow of heated and moisturized gas mixture via nasal cannula provides effective respiratory support in patients with dyspnoea and hypoxemia (Oštir, 2015). In the Slovenian territory it is called high flow treatment (ZVP), otherwise it is known as the high flow nasal cannula (HFNC) method. The described treatment has a beneficial effect on the diseased res-

piratory system, since it actively flushes the air out of the nasopharyngeal space, decreases the air flow resistance in the respiratory tract, and establishes a positive pressure at the end of the exhalation (Krivec, 2013).

The advantage of inhaled medication is that the medication comes straight to where it should work. However, inhaled medication will only be effective if enough of it is in the lungs and in the right place (Oštir, 2015). Respiratory size, respiratory rate, inhalation airflow, and respiratory mode present significant challenges for effective aerosol deposition (Arzu and Restrepo, 2012). Infants and toddlers crying and defending receive virtually no inhaled medication into the lungs as most of the dose remains in the upper airways or throat, which is then swallowed (Douglas et al, 2017). When crying, they have a shorter inhalation time, higher inspiratory flow, longer exhalation time, and more respiratory obstruction than they would at rest (DiBlasi, 2015).

Maintenance of upper airway patency

The nose contributes most of the resistance to airflow in the airway. Infants up to 6 months breathe primarily through the nose (Krivec, 2014). The upper and lower airways are narrower in a young child, resulting in faster obstruction due to respiratory secretions, swelling or foreign bodies (Grošelj Grenc, 2017). Thus, small obstruction can have a profound effect on the child's breathing (Pavčnik and Bernik, 2016). The suction of the upper respiratory tract improves the patency of the upper airways. Suction will be successful and effective when there will be less breathing effort, improved respiratory rate, better oxygen saturation, no visible secretions, as well as improved skin color (Zupan and Leskovec, 2019). Lower throat and throat

aspirations are not recommended in a child with bronchiolitis (Mrvič et al, 2007; Zupan, 2009).

Positioning the infant and child in a position for easier breathing and maintaining an open airway

In the case of severe respiratory distress, the correct position opens the airway and enables satisfactory respiration and oxygenation. Sometimes the child places himself in the position which decrease respiratory effort (Berger, 2014). No position has an advantage (Nagode et al, 2016). Usually, the child prefers to be in the parent's lap because he or she feels safe there. Newborns and infants are given a so-called nest in which they are in the best physiological position, but above all they feel safe, which calm them down. Check the comfort of clothing and loosen the tightness of the diapers to prevent pressure on the diaphragm, which is the main respiratory muscle in children (Oštir, 2017). In a child with inadequate breathing the maintenance of patent airway is first priority. When this is achieved, if breathing remains inadequate, ventilation must be supported with self inflated bag and mask (Van de Voorde, 2015). The position of the head should be neutral in the newborn, while in infants the head should be tilted slightly back to the so-called sniffing position. This allows the tongue not to fall backwards, thus preventing the airway from closing. In the event of respiratory failure, care must be taken when we ventilate in order not to press the soft tissues under the chin with the fingers, thereby causing the the obstruction of the airway (Berger, 2014).

Feeding and hidration

A worse appetite due to fatigue, severely increased breathing, irritating cough and stuffy nose, can lead to dehydration. During feeding the child must be observed

to determine whether he is coughing and have a pottencial risk for aspiration or if he is tired. Excessive fatigue during feeding can lead to a worsening of the child's health and worsening respiratory distress (Zupan, 2009).

Dissscussion

The most common cause of death in a child is respiratory failure. Respiratory distress is most often caused by respiratory diseases caused by respiratory diseases, but they are also caused by other conditions. The nurse will thus meet with a child in respiratory distress in various fields. Recognizing respiratory distress and/or threatening respiratory failure is extremely important, so the nurse should know the anatomical and physiological differences in breathing between the adult and child, and at the same time identify the needs of the child that will arise. Activities that can address the identified and potential needs of a child in respiratory distress are part of the nursing plan and include observation and measurement of vital signs, aspiration of the upper respiratory tract, placement in a breathing position, oxygen and respiration medication, and care for adequate nutrition and hydration In this way it will contribute to better results in the treatment of the baby in respiratory distress.

Respiratory distress in a child is a common cause for admission of a child to hospital. It is an emergency and unrecognized can lead to death. The nurse plays an important role in the treatment of the baby in respiratory distress, as it can contribute to a better outcome of treatment with proper and timely observation and action.

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