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RESPIRATORY DISEASES IN CHILDREN FROM 0 TO 5 YEARS OF AGE: A NARRATIVE REVIEW OF THE LITERATURE

Lívia Eduarda do Nascimento Dias
Faculty of Health Sciences: Pitágoras
Codó - Maranhão

Ana Vitória Luz Lima
https://lattes.cnpq.br/9254070132185656

Bruna Corrêa Fachini
https://lattes.cnpq.br/3444185313240655

Giorgia Novelli Dziachan Kaczam
https://lattes.cnpq.br/2569565135680227

Giovanna Novelli Dziachan Kaczam
https://lattes.cnpq.br/3828646444130720

João Vitor de Medeiros Lech
https://lattes.cnpq.br/9393955938618790

Dayane de Oliveira Souza
https://lattes.cnpq.br/6630361753454876

Igor Dala Bernardina
https://lattes.cnpq.br/1964596837572682

Rayssa Cristina Vieira de Souza
https://lattes.cnpq.br/2891086859417402

Lorena Alcebíades Borges
https://lattes.cnpq.br/3865198986838707

Marciel Leal Moura
https://lattes.cnpq.br/1045968941649040

Giovanna Oliveira Costa
https://lattes.cnpq.br/4352036285326639

Abstract: Objective: Evaluate the most common respiratory diseases in children aged 0 to 5 years and their follow-up in child development by reviewing the main articles available on the topic. **Literature review:** Respiratory diseases are diseases that can affect airway structures, such as the nose, larynx, pharynx, trachea and lungs. In the pediatric population, there are many risk factors, such as environmental ones that contribute to the development of diseases in the lower respiratory tract, with smoking, associated with passive ingestion of waste, being one of the biggest factors. Furthermore, atmospheric polluting agents in each specific region, temperature differences and crowding are some other risk factors. This way, to develop care activities and promote the child's health, the family presents itself as a fundamental part in maintaining care for respiratory diseases, as well as in preventing. **Conclusion:** In terms of management in primary and hospital care, studies carried out in our country show that the prevalence of patients with respiratory symptoms who seek Basic Health Units (UBS) varies from 5 to 15%. In 2015, the WHO proposed a strategy called the Practical Approach to Lung Health (PAL Strategy).
Keywords: Respiratory Tract Infection; Epidemiology; Mortality; Child; Risk factors.

INTRODUCTION

Respiratory diseases are diseases that can affect airway structures, such as the nose, larynx, pharynx, trachea and lungs. Generally, they can cause irritation or inflammation in these structures, and can also lead to obstruction of the airways and make breathing difficult. The lungs are one of the largest organs in the human body, their main function being gas exchange, with the purpose of promoting oxygenation of organs and tissues. To perform its function, the lung is the only organ that is constantly exposed to the external environment, due to toxic and infectious agents present in the air (LIU, et al., 2012).

In the pediatric population, there are many risk factors, such as environmental ones that contribute to the development of diseases in the lower respiratory tract, with smoking, associated with passive ingestion of waste, being one of the biggest factors. Furthermore, atmospheric polluting agents in each specific region, temperature differences and crowding are some other risk factors. In this context, there are also other warning signs that can lead to various complications, such as respiratory irregularity, vomiting, dehydration, hypoxemia without cyanosis and tachycardia (ALENXANDRINO, et al., 2022).

From this perspective, respiratory diseases are important causes of hospitalization and morbidity and mortality in the world and are among the main causes of hospital admission in the pediatric area. Brazil is one of the countries with the highest prevalence rates of asthma and allergic rhinitis in the world. Pneumonia is the main cause of hospitalizations in children under 5 years of age. Therefore, the most frequent infectious conditions are those that affect the upper airways, however those related to the greatest severity are those in the lower airways, such as those causing pneumonia, pulmonary tuberculosis and bronchiolitis. (AZEVEDO, et al., 2015; BEBER, et al., 2020).

Furthermore, it is believed that all children become infected with respiratory viruses within the first few years of their lives. The vast majority are caused by viruses, especially Respiratory Syncytial Virus (RSV), influenza and rhinovirus, among others (ANTUNES et al., 2013; BEBERET, al., 2020; Goncalves & Bhering,2021).

Therefore, to develop care activities and promote children's health, the family presents

itself as a fundamental part in maintaining care for respiratory diseases, as well as prevention. It is important that primary care works with family members of children with respiratory diseases, considering that the presence of an acute or chronic disease directly interferes with the daily lives of children and their families. Unfortunately, there is a significant lack of permanent education and quality assistance in hospitals and basic health units, so that health professionals, in different roles, can work with the family, with the aim of transforming reality beyond the scope of hospital and primary care. (SILVEIRA, et al., 2012).

Therefore, this narrative review of the literature aims to clarify respiratory diseases in childhood, focusing mainly on the most common ones in children aged 0 to 5 years and their follow-up in child development, avoiding unfavorable consequences for the child population.

LITERATURE REVIEW

Diseases that affect the respiratory tract are responsible for a large proportion of illnesses and deaths in adults and especially in children, altering infant mortality rates. Children's respiratory diseases are the group of diseases of different etiology and severity that compromise one or more portions of the child's respiratory tract (ANDRADE, et al., 2015).

RISK FACTORS

From the 20th century onwards, respiratory diseases became the main cause of infant mortality, affecting children under five years of age, the reasons are associated with a lack of knowledge during the first symptoms, poor basic health conditions and the adoption of measures unsuitable for treatment. Breastfeeding is considered a protective factor against acute respiratory infection, and risk factors include: home ventilation, the child's nutritional status, the parents' level of education, household density and the residents' smoking status. of the house, especially the mother. (BARRETO, et al., 2021).

The incidence of respiratory diseases in children is influenced by several factors, among which, air pollution was the main risk factor related to these diseases, followed by natural climatic conditions and, to a lesser extent, viral infections, behavioral factors and/or domestic and family history of the disease. The impacts of air pollution on respiratory, cardiovascular and metabolic health have been studied and highlighted, as it is a risk factor caused by anthropogenic activities, and can be reduced. However, it must be noted that even at levels considered safe by the WHO, air pollution contributes to an increase in the number of hospital admissions of children due to respiratory problems. (BELINI, et al., 2021).

Children up to two years of age are more susceptible to the effects of air pollution and, therefore, can develop acute respiratory symptoms more easily (NASCIMENTO et al., 2017), as they have greater pulmonary ventilation than adults (VIEIRA et al., 2012, NASCIMENTO et al., 2017). Furthermore, in this age group, children spend less time outdoors and, for this reason, have less contact with air pollution. However, brief contact with pollution can have more severe effects (NARDOCCI et al., 2013, NASCIMENTO et al., 2017).

These pollutants are capable of increasing the epithelial permeability of the bronchi, consequently, leukocyte infiltration and the release of inflammatory mediators (CÉSAR; NASCIMENTO, 2015). Considering that children's lung ventilation is greater than adults (VIEIRA et al., 2012), they become more prone to inflammation of the upper

and lower airways due to exposure to air pollution and thus represent a risk group for such effects. Chronic exposure to air pollution prematurely sensitizes the respiratory tract, which is already inflamed due to other health issues. Therefore, pollution represents a source of early and continuous allergic sensitization. (FRAUCHES, et al., 2017).

It is also possible to verify the relationship between viral infections and respiratory problems in children. Viruses are largely responsible for the incidence of respiratory diseases in children under three years of age. Around 50% of colds are of viral origin, and result in economic losses in relation to medical care, and social losses due to school absences (LEOTTE et al., 2017). The highest incidence of respiratory diseases due to viral causes in children under three years is mainly due to their immature immune and respiratory systems, which makes them more prone to infections and co-infections. (MARTINS, et al., 2016).

Furthermore, age influences the environment and individual behavior. At older ages, they spend most of their time in other places, due to curricular and extracurricular activities, which involve movement and contact with other risk factors. Specific environments and individual behavioral patterns can influence individual exposure to pollutants and clinical respiratory patterns (VIEIRA et al., 2012).

Behavioral and/or domestic factors (use of a woolen blanket, parental smoking, contact with household dust, among others) seem to have little influence on children's respiratory health, compared to the others mentioned. Although there is a mild effect, children with atopic allergies, rhinitis or asthma respond more severely to household dust (GUILHERME, 2012).

Passive smoking children are at greater risk of presenting respiratory symptoms, as well as greater morbidity (SIGAUD, 2016), in the same way as smoking during pregnancy (SILVA et al., 2013b). A family history of asthma is also a risk factor (SILVA et al., 2013b, GONÇALVES, 2016, BRANDÃO et al., 2017), and leads to a 2.4 day longer hospital stay compared to those without a family history (SILVA et al., 2013)

Studies already carried out indicate that respiratory morbidity rates according to sex are more significant among males for the three respiratory diseases investigated. However, the difference between sex rates in COPD is more pronounced, approximately twice as high among men. Pneumonia appears to be the main cause of hospitalization, followed by asthma and COPD. The cause of death from pneumonia can be preventable, through the implementation of simple, accessible, low-cost measures that do not require diagnostic technology, as well as sophisticated therapeutic resources in most cases. Delays or errors in diagnosis and therapy may be potential causes of death from pneumonia. (NICOLUSSI, et al., 2014).

MAIN RESPIRATORY DISEASES

Asthma, a pathology with significant prevalence in children, has a good prognosis when clinically monitored with effective interventions, including prevention and control, which can effectively reduce these indicators. (PASSOS, et al., 2018).

COPD is responsible for a considerable proportion of emergency medical care, outpatient consultations and hospital admissions. The disease has a worse prognosis for child development when compared to other pathologies, in addition, it causes high costs related to healthcare services and social expenses for the family members in question. (PRATO, et al., 2014).

THERAPEUTIC MANAGEMENT

In terms of management in primary and hospital care, studies carried out in our country show that the prevalence of patients with respiratory symptoms who seek Basic Health Units (UBS) varies from 5 to 15%. In 2015, the WHO proposed a strategy called the Practical Approach to Lung Health (PAL Strategy). The PAL strategy corresponds to a systematized, standardized approach with integrated action by the individual who seeks the Primary Health Care Unit (in the case of Brazil, the UBS with or without an implemented Family Strategy) due to respiratory symptoms. It targets the most prevalent respiratory diseases among patients aged 5 years and over. (TOMBOLATO, et al., 2021).

The PAL Strategy has four main objectives: Epidemiological objective: Reduce the burden of morbidity and mortality from respiratory diseases; Objective for the quality of health care: Improve the clinical management of respiratory symptoms (RS) in general; Management objective: Increase the efficiency of activities for planning and implementing the PAL strategy; Cost-effectiveness objective: Reduce the cost of management procedures and promote cost-effective healthcare interventions for respiratory diseases. (SILVEIRA, et al., 2012).

FINAL CONSIDERATIONS

Respiratory diseases are diseases that can affect airway structures, such as the nose, larynx, pharynx, trachea and lungs. Generally, they can cause irritation or inflammation in these structures, and can also lead to obstruction of the airways and make breathing difficult. The incidence of respiratory diseases in children is influenced by several factors, among which, air pollution was the main risk factor related to these diseases, followed by natural climatic conditions and, to a lesser extent, viral infections, behavioral factors and/or domestic and family history of the disease. Therefore, to develop care activities and promote children's health, the family presents itself as a fundamental part in maintaining care for respiratory diseases, as well as prevention. It is important that primary care works with family members of children with respiratory diseases, considering that the presence of an acute or chronic disease directly interferes with the daily lives of children and their families.

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