



ANALYSIS OF THE PREVALENCE AND RISK FACTORS OF INFECTIOUS DISEASES IN PEDIATRIC PRACTICE

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<https://doi.org/10.5281/zenodo.12197569>

ARTICLE INFO

Received: 15th June 2024

Accepted: 20th June 2024

Online: 21th June 2024

KEYWORDS

Diarrhea, pneumonia, microbial diseases, classical methods, optimal treatment.

ABSTRACT

This information was more important than ever in the 1900s. Unfamiliar infectious diseases can be imported into industrialized countries due to population migration and low flight prices. The industrial Revolution in Europe in the 18th century increased the proportion of women in the workforce. This increased further after World War II, which led to an increase in the number of women in the workforce. Their participation in the labor force has influenced the structure of families, so today they are more inclined to the structure of nuclear families than to large families who have assumed responsibility for caring for children whose parents are absent. The outbreak of severe acute respiratory syndrome, first discovered in 2003, is an example of this. Despite modern technology and significant financial investments, it took several months to identify the pathogen, create diagnostic testing, and develop a disease reporting and isolation plan. The control and prevention of infectious diseases depend on understanding the sources of transmission. This article summarizes the basic principles of transmission of infectious diseases, as well as highlights the numerous factors that determine the causative agent, host and environment of these diseases. These factors are of particular importance for medical professionals. In addition, the basic principles of prevention, diagnosis and control of infectious diseases will be considered.

Introduction. Every healthcare professional dealing with infectious diseases or infections has tasks such as working with patients who have the disease and who are contagious, or with people who come into contact with an infectious disease, including those who are susceptible to infectious diseases. It is known that infectious diseases are diseases



caused by various pathogenic microbes, viruses or their toxic products, which carry a huge global burden on the economy around the world, having a disproportionate impact not only on health systems, but also on particularly vulnerable populations. It is precisely because of infectious diseases and related complications, especially in the case of epidemics, that approximately 50 million residents may experience disability and death of about 10 million residents each year. The vast majority of these reported cases of disability and death are attributed to diseases such as lower respiratory tract infections, diarrheal diseases, HIV/AIDS, malaria and tuberculosis [1, 2, 3, 4]. It is worth noting that the incidence of infectious diseases varies depending on age, gender, and the state of the body's defenses, and at the same time the likelihood of transmission of infection in children increases due to the lack of opportunity to stand out from the general population. For this reason, infectious diseases pose a great danger to people of all ages and genders around the world and are becoming one of the biggest problems, especially for children today. The specific anatomical and physiological characteristics of children and adolescents, incomplete formation of the immune system and insufficient adaptation to the external environment, especially in crowded public places, increase their susceptibility to infectious diseases. In this regard, more than 50% of the causes of death among children under the age of 5 are caused by infectious diseases such as pneumonia, diarrhea and malaria. There is a high risk of pandemics. Currently, there are serious changes in the epidemiology of infectious diseases that develop in children. This, in turn, requires consideration of some general principles of infection control and safety in children and adolescents, and the development of the most optimal methods for the prevention and treatment of certain infections that pose a serious danger to health and life [5, 6, 7, 8, 9]. In this regard, the article presents the results of research on the development of basic principles for the diagnosis, control and prevention of infectious diseases occurring in children and adolescents.

The main purpose of this presented manuscript is a brief analysis of the results of scientific research on the identification, prevention and development of optimal therapeutic measures for infectious diseases occurring in pediatric practice.

Epidemiology. There are also age differences in the number of infections and the type of infections, in particular, an average of more than 14 episodes of infection were reported in children aged 0 to 3 years. However, in children under the age of 14 and adolescents, this number increases several times, and it is the infections characteristic of this age that pose a serious health hazard. It was found that 1/5 of deaths caused by infections are associated with diarrhea and pneumonia, 1/10 with malaria and only 1% with measles [10, 11, 12].

The main ways of spreading infectious diseases in children and children. Preschools, whose importance and reach are growing every day, are potentially dangerous environments in which infectious diseases can spread rapidly. These institutions represent a risk environment that is multifaceted and requires consideration of many contributing factors. Eliminating this risk does not mean completely abandoning preschool institutions. Identifying relevant risk factors and causes can help create a safer and healthier atmosphere in preschool settings. Infectious diseases pose a danger not only to human health, but can also negatively affect many things, such as the economy, employment, productivity, the length of annual leave, the use of antibiotics, peer relationships, the mental state of the teacher, the



teacher-child relationship, parent-parent and school-parent environment in the classroom. Solving the problem of the growth of infectious diseases in preschool institutions, where the personality of children is formed, contributes to the upbringing of healthy and educated children, which is undoubtedly our most valuable advantage. It also reduces health risks, healthcare costs, and health inequalities. [12, 13, 14, 15].

Risk factors for infectious diseases occurring in pediatric practice. The factors that may increase the risk of infections in children during pregnancy are unknown from prospective cohort studies conducted in high-income countries. A higher risk of outbreaks occurs in school settings because, unlike medical facilities, schools lack standard infection control methods, may have inadequate cleaning programs or lack equipment for proper hand washing, are not a major area of activity for teachers or schools, and are difficult to conduct hygiene measures. Children are acknowledged as important carriers of seasonal and pandemic infectious diseases. They also have a weaker immune system, which increases their susceptibility to infection, and they are arguably worse at hand and respiratory hygiene [11, 14, 15].

Modern methods of diagnosis of infectious diseases. It is known that diagnosis is the first step towards the treatment and eradication of infectious microbial diseases. Due to the constant development of pathogens and the emergence of new diseases, there is an urgent need to identify appropriate diagnostic methods for the best management of each disease. The success of specific diagnostic methods in any population depends on various factors, including the type of microbial pathogen, availability of resources, technical expertise, and severity. Well-documented diagnostic methods for representative microbial diseases such as tuberculosis (bacterial), malaria (parasitic) and HIV (viral) are used in medical practice. Data collection and identification of information were carried out using diagnostic methods from scientific journals such as Pubmed, Science Access, Scopus, EMBASE and some regional databases. In addition, databases on tuberculosis, malaria and HIV from WHO and CDC have been added. Financial resources, experience and management, functionality, virulence of the pathogen and the level of epidemic among the population were evaluated and compared these methods. Classical methods used to diagnose the population included microscopy; immunoassays such as ELISA and colorimetric analysis; and modern biotechnological methods such as genotyping. In the case of bacterial diseases such as tuberculosis, ELISA and colorimetric methods are used in both rural and urban environments with a sensitivity of 90%. Cultivation and microscopy are common, but they are insensitive, and cultivation requires special conditions and time. Due to their complexity and usefulness for studying drug-resistant strains, genotyping and SNP analysis are mainly carried out in urban laboratories. Parasitic malaria also shows the same trend: diagnostic methods such as enzyme immunoassay and immunoassay-based RDTs are common among both rural and urban populations, with high sensitivity and rapid results 90% [16, 17, 18, 19, 20].

Measures for optimal treatment of infectious diseases. It is important that all children of any age group have the opportunity to stay in a safe place free from diseases. When applied correctly, effective methods can control and prevent infections among children. Ultimately, it is the responsibility of the caregiver to supervise and ensure that safe care practices are followed. This can be done by balancing and adhering to health protection



strategies inside and outside the medical facility. All medical institutions can influence others. There is a comprehensive need for a proactive approach from all caregivers; supervision from the team; and strong support from management and other important stakeholders. The application of infection prevention and control measures means safety, quality, resource savings and respect for the rights of patients, staff and visitors. An extensive literature review was conducted to identify key infection protection measures that take into account the specific requirements of pediatricians, taking into account age factors, diseases that are most common among pediatricians, and the important role of caregivers in the prevention and transmission of diseases. Infectious disease and health initiatives address the sources of infection, both human (internal) and environmental (external), and include population-specific standards and the provision of safe care when used correctly. Ultimately, it is the responsibility of the caregiver to supervise and ensure that safe care practices are followed. This can be done by balancing and adhering to health protection strategies inside and outside the medical facility. All medical institutions can influence others. There is a comprehensive need for a proactive approach from all caregivers; supervision from the team; and strong support from management and other important stakeholders [1, 11, 15, 21].

Discussion. The Clinical Microbiology clinic is in constant development. The latest technologies have changed the way pathogens are identified and diagnosed. This chapter examines the characteristics, advantages and disadvantages of some important new methods of diagnosing infectious diseases. The chapter will be structured with technology in mind. New technologies are most influential in bacteriology and virology, but there are also promising developments in mycology and parasitology. Pathologists need a microbiological laboratory to make potentially infectious diagnoses under a microscope. Individual studies have shown that the results of molecular tests performed blindly (without visualization) are negligible and very expensive compared to a pathologist's review. Thus, in order to ensure that the interpretation of all treatments will be as useful as possible for patient care, pathologists and their microbiological colleagues should have constant communication from the moment the sample is taken until the final report. In addition, this conversation should discuss the application of molecular methods to clinical and anatomical pathology samples, as well as the changes, benefits, pitfalls and advantages of constantly evolving methods. The constant goal, as with any medical approach, is to find the most cost-effective and effective treatment method that provides maximum results for the patient [4, 12, 18, 19, 21].

Conclusions. With proper treatment, infection in any medical facility can be avoided. Health-related infections will increase morbidity, mortality, and resource consumption if infections are ignored or proactive methods are not used.

Although the cases varied greatly, the children suffered about fourteen infections in the first three years of life. It is assumed that the main factors of the infectious burden are host factors, although environmental exposure explains only a small part of the differences.

But for the rapid and innovative treatment of a severe, highly infectious disease, fast methods are needed. Thus, the effectiveness of diagnostic methods to improve management depends on the disease itself and on the amount of funding.

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