When we talk about main systemic allergies, 20,5% have respiratory allergies such as allergic rhinitis, asthma and 79.5% are not having any respiratory allergies. When we talk about skin allergies, 24,6% are having skin allergies and 75,4% are not. 42,35% are having reactions to environmental allergens such as dust, mites, and pollen while 57,7% are not. When study about the medication, 14,6% regularly taking medication or antibiotics that may impact to microbial composition while 85,4% are not. 16,3% are have been hospitalized for allergic reaction and 83,7% are not. When studying about the hygienic practice which can prevent from allergen producing microbes which reducing allergic disorders, 56,7% are participating recommend hygienic practice and 43,3% are not.

Conclusions

A majority of participants believed that the diversity of microbes in their environment and the presence of microbes can influence the development of allergies and majority of participants engaged in hygienic practices to prevent exposure to allergen-producing microbes. The study highlights the prevalence of allergies among university students among Sri Lanka and Belarus and their awareness of the role of microbes on allergic disorders. It also emphasizes the importance of hygiene practices and environmental factors in managing allergic conditions. Further research and education on this topic could help improve understanding and management of allergic disorders among this population.

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PREVALANCE AND PREVENTIVE MEASURES OF MENINGOCOCCAL MENINGITIS IN SRI LANKA

Introduction

Meningococcal meningitis is an infection of the meninges that envelops spinal cord and the brain. This infection is caused by bacteria named *Neisseria meningitidis,* which is an anaerobic, gram-negative diplococci. With 5–10% atmospheric carbon dioxide, it grows in blood agar at room temperature. *N. meningitidis* localizes mainly in naso-and oropharynx and can colonize in other parts of the body like conjunctiva, mucosa and urogenital tract. This form of meningitis has high mortality and morbidity rates [1]. Of the many different bacteria that can cause meningococcal meningitis, *N. meningitidis* can result in large epidemics. Different pathogens like bacteria, fungi or viruses can cause the disease, but bacterial meningitis have the

highest global burden. [2]. According to the polysaccharide capsule it has, 13 serotypes have been identified. Out of these serotypes A, B, C, X, Y, Z, W-135 and L are capable of human disease [1]. Transmission of *N. meningitidis* occurs from person to person via droplets of throat or respiratory secretions from carriers. For example, having close contact with an infected person who coughs, sneezes or living in a close dormitory with an infected person can cause the spread of the disease. Meningococcal meningitis mainly affects infants, adolescents and young adults, although it can affect anyone of any age. *N. meningitidis* only affects humans [2]. After the colonization in the nasopharynx, *N. meningitidis* incubates for 1 to 10 days and further penetrates the submucosa. Bacterium invades the bloodstream in 10 to 20% of cases. In plasma, antibodies, complement and phagocytes may eliminate bacteria. If the host defense system fails to remove bacteria, bacteremic phase begins. This results in invading the meninges which leads to meningitis and may cause fatal septicemia [2]. Even though meningococcal meningitis occurs worldwide, the highest incidence is found in 'meningitis belt' in Sub – Saharan Africa. Occasional outbreaks and lower rates of disease are experienced in other regions of the world. Annual attacks in this region average 0.3 to 3 per 100,000 people [3]. In Sri Lanka, meningococcal meningitis is categorized as a fatal disease because it can progress quickly to a serious state within several hours, hence considered as a medical emergency [4].

Goal

To evaluate the effectiveness of the organization of treatment, to provide a temporal characterization of the incidence and preventive measures of meningococcal meningitis in Sri Lanka.

Material and methods of research

The generalization and analysis of the scientific article (WHO, NCBI, Epidemiology Unit – Sri Lanka) on this topic.

The results of the research and their discussion

N. meningitidis contains many virulent factors: factor H binding protein, Pili, capsular polysaccharide, opacity proteins and lipo-oligosaccharides. The bacterium is protected from complement-mediated lysis and phagocytosis by polysaccharide capsule [1]. The incubation period may range between 2–10 days with an average of 4 days. The prominent symptoms of meningococcal meningitis are headaches, high fever, vomiting, stiff neck, confusion and sensitivity to light [2]. There are two types of clinical disease – meningococcal meningitis and meningococcal septicemia. Out of the two types, meningococcal meningitis is common and when treated adequately has a good prognosis, while meningococcal septicemia is uncommon and highly fatal [4]. In Sri Lanka, meningitis is a notifiable disease since 2005. It was reported to the epidemiology unit 276 cases, during the 4th quarter of 2015. Of the clinically confirmed cases 40% were less than 1 year, 25% were at the age group of 1–5 years and 14% belonged to the age group 6–145 years. Out of these cases 60% were males and 40% were females [5]. For the last 10 years from 2013 to 2022 total 11,566 cases were identified 2013 – 853 (7.37%), 2014 – 1112 (9.61%), 2015 – 1305 (11.28%), 2016 – 885 (7.65%), 2017 – 1448 (12.51%), 2018 – 1451 (12.54%), 2019 – 1352 (11.68%), 2020 – 1427 (12.33%), 2021 – 1027 (8.87%), 2022 – 706 (6.10%) [6]. After the confirmation of the diagnosis, correct antibiotic treatment should begin as soon as possible, ideally after the lumbar puncture. Ceftriaxone, ampicillin and penicillin are the few antibiotics that can treat the infection, among the range of antibiotics [2]. In Sri Lanka the drug Ciprofloxacin is given to the following age groups with the dose of: adults and children above 12 years are given 500 mg orally as a single dose, children aged 5–12 years are given 250 mg orally as a single dose and neonates to 4 years of age children given 30 mg/kg – 125 mg orally as single dose. To prevent the occurrence of secondary cases, chemoprophylaxis is given that will remove carriers with *N. meningitidis* [4].

Conclusions

Meningococcal meningitis is a lethal disease if not quickly identified and treated. Identifying the symptoms early and immediate medical attention is extremely important to decrease the severity of the disease. Licensed vaccines are the best protection against meningococcal meningitis. Vaccination prevents the disease, among people at the risk of infection. According to clinical studies, the years 2018–2020 have shown the greatest number of cases. However, cases are presented less frequently in Sri Lanka. Prompt diagnosis and accurate antibiotic dosage will significantly reduce the rates of mortality and morbidity in the patients.

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