Pneumococcal disease: new challenges and new proposals for Latin America

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Summary

Invasive pneumococcal disease (IPD) is the leading cause of vaccine preventable deaths in children < 5 years worldwide and it causes a significant disease burden in Latin America and the Caribbean. In order to combat the increasing incidence of IPD in our region, the vast majority of countries have included pneumococcal vaccines as a prevention strategy. The GREEN group (Grupo Regional de Estudio de la Enfermedad Neumocócica) has been created to study pneumococcal disease, unify data from the Latin American countries and learn in detail the epidemiology pre and post-pneumococcal vaccination.

Key words: Invasive pneumococcal disease, vaccination, surveillance.

Palabras clave: Enfermedad neumocócica invasora, vacunación, vigilancia.

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Introduction

Worldwide, invasive pneumococcal disease (IPD) is a vaccine preventable disease that charges around a million lives each year. Approximately 90% of these deaths occur in developing countries. In 2010, the World Health Organization (WHO) recorded 7.6 million deaths in children under 5 years from which approximately 1 million were secondary to pneumonia. In addition, Streptococcus pneumoniae is responsible for a wide range of diseases such as pharyngitis, acute otitis media, meningitis, septic arthritis, bacteremia and septicemia.

Background

The vaccine-preventable diseases are a group of entities that even in our days represent a continuous challenge to global public health. They have become the main causes of morbidity and mortality in the general population. Data published by the Pan American Health Organization (PAHO) in 2013 indicate that pneumonia is within the first three main causes of morbidity and mortality, and S. pneumoniae remains the most frequent agent.

In Latin America and the Caribbean, WHO reports that 1.6 million children under the age of 5 years suffer an episode of IPD each year and among 12,000 to 28,000 deaths occur annually. Yearly, the cases of pneumococcal infection are associated to 182,000 hospitalizations (16 per 1,000 children) and 1,412,000 ambulatory consultations (121 per 1,000 children), with an economical cost of US$333 million invested in the care of the affected patients.

Prevention strategies

Nowadays, there is robust evidence that pneumococcal conjugate vaccines (PCV) in different age groups, reduce the burden of disease, morbidity, mortality, and hence the high costs in health care attention of the affected patients, providing protection against the most common serotypes.

Pneumococcus still has the highest fatality rate, estimating that mortality from meningitis in the region can be up to 60%. Different serotypes of pneumococcus show different susceptibility patterns and many are resistant to the antibiotics commonly prescribed.

Faced with this panorama, is that the scientific, medical and public health community experts around the world have joined forces to accelerate the prevention of pneumococcal disease in children and adults. One of the prevention strategies that has caused the most impact on the stepwise decrease in the burden of IPD has been the implementation of vaccines against this organism.

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New challenges, new proposals

Starting from the premise that if the disease does not recognize borders, health should not recognize it. Joined by an interest in the epidemiological behavior of pneumococcal disease and its impact on the Latin American population and its control by vaccination, is that GREEN (Group for the Study of Regional Pneumococcal disease) is born. The GREEN initiative aims to develop as a supportive group for the civil society and the state entities, mainly in regards to decision-making about pneumococcal disease and its prevention.

Pediatric Infectious Diseases specialists, members of different medical societies throughout Latin America, will collaborate in the systematic data collection, analysis, research and the respective publishing. In addition, we have the support of CIDMA (Center for Infectious Disease Modeling and Analysis) from the School of Public Health at Yale University.

The main purpose of creating this group is to unify data from the member countries of GREEN and then learn in detail the epidemiology pre and post-pneumococcal vaccination.

The following secondary objectives are proposed:
• To create a network between the participating countries.
• To compile epidemiological data about the pneumococcal pre-vaccination era of the member countries.
• To research about the impact of the PCV in the national population of the various member countries.
• To monitor the behavior of the serotypes in the post-immunization era.
• To identify the serotype variability, for subsequent analysis of risk groups and early detection of new serotypes for the introduction of new vaccines with new serotypes.

Part of the commitment of the members of GREEN is to schedule regular meetings in different countries, with a semianual or annual basis to publicize the collected information. It also aims to maintain a presence at scientific conferences in and outside Latin America and through periodical publications, share the results of the established topics with the rest of the scientific population.

Conclusion

Although, by 2014 90% of children in Latin America will receive at least one dose of PCV, the challenge never ends. New risk groups, newvalent conjugate vaccines with more valences, serotype replacement and the emergence of non-vaccine serotypes are key points to consider.

The burden of disease caused by S. pneumoniae remains a concern worldwide and hence in Latin America. Only through ongoing, systematic and scientific analysis is that we can control the different vaccine-preventable diseases. We, as part of the different medical societies, have the ineludible responsibility to contribute with our society’s health. Vaccines bring health, they are not simple drugs and this is why they should be recognized as a human right. Vaccines should not have borders.

Abstract

Invasive pneumococcal disease (IPD) is the leading cause of vaccine preventable deaths in children < 5 years worldwide and it causes a significant disease burden in Latin America and the Caribbean. In order to combat the increasing incidence of IPD in our region, the vast majority of countries have included pneumococcal vaccines as a preventive strategy. The GREEN group (Grupo Regional de Estudio de la Enfermedad Neumocócica) has been created to study pneumococcal disease, unify data from the Latin American countries and learn in detail the epidemiology pre and post-pneumococcal vaccination.

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