

# The Role of a Single Dose of Pneumo-23 Vaccine in Preventing Recurrent Respiratory Tract Infection in Patients of Tertiary Public Infectious Diseases/ Immunodeficiencies Ambulatory

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## Background

Pneumococcal infection (PI) is one of the most important causes of recurrent respiratory infections. The 23-valent pneumococcal polysaccharide vaccine (PPV23) has been demonstrated cost-effective in reducing the burden of PI. We report the clinical and serological response of patients diagnosed with recurrent respiratory tract infections, after immunization with a single dose of the PPV23.

## Methods

Fourteen subjects from the infectious diseases and immunodeficiencies ambulatory of a public tertiary hospital, São Paulo state, Brazil, who were up to 10 years of age, had received pneumococcal conjugated vaccine 10 (PCV-10), and were unable to develop an adequate response (G1); and >10 years of age that had not received PCV-10 (G2). For G1, blood samples were collected immediately prior to vaccination, and about 30-60 d post vaccination for the whole group. A specific IgG concentration  $\geq 1.3$  g/mL, at least in 60% of serotypes was considered a protective response. Clinical and serological response to PPV23 was assessed at approximately 1, 3, 6 months and 1 year after immunization.

*Streptococcus pneumoniae* or diplococcus is a crucial reason for morbidity and mortality in adults and kids worldwide.<sup>1</sup> *S. pneumoniae* may be a common beginner of the higher tract and sometimes spreads to the encompassing tissue layer tissue. It causes a good spectrum of malady and is that the most typical reason for community-acquired respiratory disorder (CAP).<sup>2</sup> In most patients, it causes noninvasive malady like otitis, sinusitis, and respiratory disorder. However, during a share of patients, the infection spreads into the blood stream leading to invasive palladium (IPD) manifesting as bacteraemia, pathology respiratory disorder, or infectious disease. The incidence of IPD varies well and is littered with factors like socioeconomic standing, age, immune standing, genetic background, and geographical location.<sup>2</sup> pneumonia generally presents with chills, fever, malaise, dyspnea, and a productive cough. Untreated patients will accomplish acute metabolism failure, septic shock, multiorgan failure, and death inside many days from onset.<sup>3</sup> In adults, there square measure variety of risk factors usually concerned within the development of pneumonia as well as age, chronic respiratory organ malady, chronic heart condition, smoking, alcohol consumption, and former hospitalization for respiratory disorder.

The capsular carbohydrate of *S. pneumoniae* determines the virulence and provides the matter target for natural and vaccine-mediated protein production. There square measure over ninety immunologically distinct serotypes of *S. pneumoniae*, supported the chemical composition of the capsular carbohydrate.<sup>5</sup> Transmission of *S. pneumoniae* happens through direct contact or via fomites and is expedited by overcrowding. organisation begins inside many months of birth and continues throughout adolescence.<sup>6</sup> The likelihood of adult organisation is directly associated with the presence of younger youngsters within the house as adults not exposed to youngsters typically have a lower prevalence of

*S. pneumoniae*.<sup>7</sup> There square measure a restricted range of medical specialty studies in Singapore, notably in relevance serotype prevalence.<sup>8-13</sup> The accessible seroprevalence information is summarized

## Results

Concerning gender, 24 (60%) were male and 16 (40%) were female ( $p > 0.05$ ). For G1, the mean age was  $6.90 \pm 0.41$  (95% CI=5.98-7.83) and  $35.60 \pm 4.9$  (25.09-46.11) for G2. Fourteen of these patients had received PCV10 and after immunization with the PPV23, 15 (100%) obtained a serological adequate response. For G2, 25 (62.5%) were vaccinated and 9 (36.0%) developed a serological adequate response. Positive clinical response was obtained in 24 (60.0%) patients; 8 (20.0%) had a partial clinical response and 8 (20%) were unable to develop an adequate response. Twenty patients (50%) were diagnosed with common variable immunodeficiencies (CVID), or secondary panhypogammaglobulinemia, and of these, one (2.5%) developed a normal response to PPV23.

## Conclusion

Polysaccharide vaccine was effective in protecting immunized patients against respiratory infections, although in patients with CVID, an inadequate antibody response was found.

## Biography

Luiz Euribel Prestes Carneiro has completed his PhD in Immunology at University of Sao Paulo, Brazil. Currently, he is a Professor in the Emergency Department and Coordinator of the Master in Health Sciences (Medicine II) at Oeste Paulista University, and in the Infectious Diseases Department at the State Maternity of Presidente Prudente. He has 25 articles published in PubMed, belongs to the Editorial Board of two Brazilian journals, five international scientific journals and acts as Reviewer for 28 international scientific journals. He has experience in the area of Immunology and Infectious Diseases, with emphasis on Human Immunodeficiency Virus, Viral Hepatitis, Visceral leishmaniasis and Primary Immunodeficiencies.