

Immunoprophylaxis against respiratory syncytial virus with palvizumab: what is new?

Imunoprofilaxia do vírus sincicial respiratório com palvizumabe: o que há de novo?

Inmunoprofilaxis del virus sincicial respiratorio con palvizumabe: ¿qué novedades hay?

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Infection by the respiratory syncytial virus (RSV) is recognized as the most important cause of respiratory tract infection in infants and young children in the world, being the main responsible for hospitalizations during winter in the first year of life⁽¹⁾. However, despite the importance of RSV as a cause of morbidity and mortality in children, there are still no effective vaccines or antiviral drugs to prevent and treat this infection. The disastrous experience with an inactivated vaccine candidate made with whole virus, developed in the sixties, still unrests the medical community in the search for a safe and effective vaccine against RSV infection⁽²⁾. The possibility of preventing the infection by RSV gained even more importance in the last 10 years, due to the accumulation of evidence showing that hospitalized infants with lower respiratory tract infection (especially those caused by RSV and rhinovirus) are at greater risk of developing recurrent episodes of wheezing and asthma, when compared to children that did not present severe bronchiolitis⁽³⁻⁵⁾.

Passive immunization with palvizumab, a humanized monoclonal antibody, is currently the main tool available for the prophylaxis of RSV infection. Its use is indicated for specific risk groups: preterm infants and children under 2 years old with congenital heart disease and hemodynamic repercussion or with chronic pulmonary disease, who needed treatment in the 6 months prior to the season of RSV⁽⁶⁾. However, the impact of this intervention in the burden of the disease attributable to RSV is minimal, once most hospitalizations due to the virus occur in healthy infants, who are not included in prevention programs.

The current edition of the Journal includes an article by Monteiro *et al*⁽⁷⁾, which presents results of a study including a cohort of 198 infants who received palvizumab, according to the recommendations in the state of São Paulo, Southeast Brazil. Infants were followed prospectively during a year, to assess the impact of palvizumab on the viral etiology of acute infections in the respiratory tract and rates of hospitalization and death. It is remarkable, among the various important findings, the rate of only 0.7% of hospitalization by RSV in infants undergoing immunoprophylaxis (only one hospitalization by RSV among the 198 followed infants). One of the limitations of the study, pointed by the authors, was the lack of a control group, for ethical reasons, which prevented the assessment of the effectiveness of the intervention with immunoprofilaxys in the studied group.

There is today a growing debate regarding the scope of indications for the use of palvizumab, motivated not only by the high cost of the product, but also by recent evidence in the literature. The licensing of palvizumab, in the late 1990s, was based on the results of a randomized, placebo-controlled study with 1,500 preterm infants, which showed that immunoprofilaxys reduced in approximately 55% the rates of hospitalization by RSV (10.6% in the Placebo Group against 4.8% among high-risk infants who received palvizumab)⁽⁸⁾. However, more recent data⁽⁹⁻¹¹⁾ suggest that the RSV hospitalization rates among preterm infants belonging to risk groups present a trend towards reduction in relation to the rates found in the studies conducted in the 1990s, in line with the results by Monteiro *et al* in Brazil.

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The confirmation of lower rates of de hospitalization by RSV in preterm infants currently brings a new challenge for the analysis of the cost-effectiveness demonstration of this intervention, requiring an even higher number on infants covered with immunoprofilaxys to enable the prevention of one RSV hospitalization. On the other hand, there is increasing evidence suggesting that the use of palivizumab in children reduces the incidence of future episodes and days of wheezing^(12,13), anticipating the possibility of additional benefits, not incorporated

into cost-effectiveness and that, if confirmed in other populations, may change the scenario of the prevention of the infection by RSV.

Finally, we emphasize that there is no evidence so far in the literature to support the extending use of palivizumab to other groups, such as patients presenting cystic fibrosis, those immunocompromised, and patients with Down syndrome, nor to support its use to control outbreaks in Neonatal Intensive Care Units. Therefore, palivizumab does not have indication for routine use in these situations⁽¹⁴⁾.

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