Outpatient respiratory syncytial virus infections and novel preventive interventions.

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Understanding RSV Prevention in Children: A Guide for Doctors in primary and public healthcare

Respiratory syncytial virus (RSV) is a common cause of respiratory infections in young children. About 1 in every 4 healthy babies gets RSV, and 1 in 56 babies needs to go to the hospital because of it, during their first year of life. But most of the time, doctors in primary care clinics and parents at home can take care of children with RSV.

Good news! There are now two new products that can help prevent RSV infections in babies. One is a vaccine for pregnant women, and the other is a shot for babies. Studies show they are more than 70% effective in stopping severe RSV infections in the first few months of life.

While many studies have focused on the effects of these products for children, parents and doctors in hospitals, a new review by Hak and colleagues focuses on what doctors in primary care and public health settings can expect.

As RSV prevention becomes available worldwide, doctors and nurses will probably get questions from parents. This review gives important information for parents, like what RSV symptoms are, who is more likely to get RSV, how it's treated now, what might happen in the long term, and what to expect from the new prevention methods. Hak and the team worked with a group of parents from the ReSViNET patient advisory board to answer common questions about RSV prevention (Box 1), making it easier for parents and doctors to understand each other.

The review also talks about different ways countries can include RSV prevention in their immunization plans, like giving the RSV shot all year round, or only during RSV season. In addition, the review discusses if preventing RSV could potentially lower the risk of asthma later in childhood. Children who get severe RSV infections early in life often have repeat wheezing and higher chances of asthma later on. This could imply that preventing RSV might reduce the risk of asthma in childhood. However, the authors conclude that more long-term studies in healthy babies are needed to determine if RSV vaccines could prevent asthma.

Nonetheless, the authors think these new product to reduce the risk of severe RSV are exciting. But, it's important for parents to get good advice from doctors to make these new methods work well.
Box 1 Frequently asked questions (FAQ) by parents to healthcare professionals

1. What is RSV, and what are signs of RSV infection?
RSV is a common cause of respiratory infection in children. Symptoms can include a runny nose, coughing, wheezing, fever, and difficulty breathing.

2. How common is RSV, and what is the risk for my child to become seriously ill?
Nearly all children get infected by RSV before the age of two. Most infections are mild, but breathing difficulties can become severe for some children. During the first year of life, one in seven healthy babies visit a doctor and one in 56 are being hospitalized because of RSV infection. Some children, particularly premature infants and those with underlying health issues, are at higher risk. In high-income countries, mortality due to RSV infection is extremely rare.

3. What options are there to prevent RSV infection in my child?
Good hand hygiene and avoiding close contact with sick individuals can reduce the risk of RSV infection. Recently, RSV disease can be prevented either by giving antibody products to babies, or by giving their mothers RSV vaccine during pregnancy. For most babies, either the maternal RSV vaccine or the preventive antibody is recommended, but not both.

4. How do these RSV immunizations work, and how effective are they?
Both immunizations protect against severe RSV disease, but they provide immunity differently. The maternal vaccine triggers the mother’s immune system to produce RSV antibodies, which are passed to the baby during pregnancy. Nirsevimab (Beyfortis) is a long-acting monoclonal RSV antibody given directly to the baby. Both immunizations require only a single dose (one shot) and offer over 70% protection against severe RSV for at least five months, but protection fades over time.

5. What are potential side effects?
Most frequently reported side effects by pregnant people included pain at the injection site, headache, muscle pain, and nausea. Although not common, the clinical trials showed a small imbalance in preterm births (5.7% in vaccinated people vs. 4.7% in those receiving placebo). It is unclear if this is related to the RSV vaccine or if this occurred for reasons unrelated to vaccination; this will be further studied. Side effects after nirsevimab were rare and mainly included pain, redness and swelling at the injection site, and rash.

These questions have been formulated in collaboration with parents on the RSV Patient Advisory Board of the ReSINet foundation.