INFANT RSV PROTECTION

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RSV Protect

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Respiratory Syncytial Virus (RSV) is a significant cause of respiratory illness in infants and young children. It can lead to severe conditions such as bronchiolitis and pneumonia, which often require hospitalization. Pregnant women have been identified as a crucial population for RSV vaccination because vaccinating them can provide immunity to their unborn children. This article delves into the importance, benefits, and safety of RSV vaccination for pregnant women.

THE IMPORTANCE OF RSV VACCINATION

- RSV is highly contagious and spreads through respiratory droplets when an infected person coughs or sneezes.
- While RSV infections can affect individuals of all ages, infants under six months are particularly vulnerable due to their underdeveloped immune systems.
- Maternal vaccination during pregnancy is seen as a strategic approach to protect newborns, as antibodies generated by the mother are passed to the fetus, providing early protection after birth.

Impact on Infants

Infants infected with RSV can experience severe respiratory issues that necessitate medical intervention. The virus can cause inflammation of the small airways in the lungs, leading to breathing difficulties. In severe cases, it can result in hospitalization, intensive care, and even death. By vaccinating pregnant women, the risk of severe RSV infection in infants can be significantly reduced, ensuring better health outcomes.

Benefits of Vaccination For Pregnant Individuals

The primary benefit of RSV vaccination for pregnant women is the provision of passive immunity to their newborns.

This passive immunity can protect infants during the first few months of life when they are most vulnerable to severe RSV infections.

Maternal Immunization

Maternal immunization has been successfully used to protect against other infectious diseases. Vaccines administered during pregnancy, such as the influenza and pertussis vaccines, have shown effectiveness in safeguarding both the mother and the newborn. The RSV vaccine operates on a similar principle, aiming to generate high levels of protective antibodies in the mother that are transferred to the fetus through the placenta.

Clinical Trials and Efficacy

Several clinical trials have been conducted to evaluate the safety and efficacy of RSV vaccines for pregnant women. These trials have demonstrated promising results, with vaccinated women showing higher levels of RSV-specific antibodies compared to unvaccinated women. The antibodies are efficiently transferred to the fetus, and studies indicate a significant reduction in RSV-related hospitalizations and severe respiratory illnesses in infants born to vaccinated mothers.

Safety Considerations

The safety of any vaccine is paramount, especially when it comes to pregnant women. The RSV vaccine has been found to be safe, with the most common side effects being mild and temporary, such as soreness at the injection site and mild fever. Clinical trials have carefully monitored the health of both the mother and the infant, ensuring that no adverse effects are linked to the vaccination.

NACI's Recommendations for Infant Protection from RSV

The National Advisory Committee on Immunization (NACI) provides guidance on the use of vaccines and immunization practices in Canada. With respect to Respiratory Syncytial Virus (RSV) for infant protection from RSV, currently, NACI emphasizes the following points:

Use of the Monoclonal Antibody in Infants (Nirsevimab)

NACI endorses the use of Nirsevimab, a monoclonal antibody, as a preventive measure to protect infants against RSV. Nirsevimab is given to babies after they are born and has shown efficacy in reducing RSV-related hospitalizations and severe respiratory illnesses in infants. It is particularly beneficial for infants at high risk of severe RSV disease, providing targeted immunity during peak RSV seasons.

RSV Vaccination for Pregnant People (RSVpreF)

NACI highlights the importance of maternal immunization using the RSV vaccine (RSVpreF) as an option to protect newborns from severe RSV infection through passive immunity. Similar to vaccines for influenza and pertussis, the RSV vaccine is recommended during pregnancy to generate high levels of protective antibodies in the mother that are transferred to the fetus. This passive immunity can protect infants during their first few months of life when they are most vulnerable to severe RSV infections. Specifically for RSV protection, the maternal RSV vaccine (RSVpreF) can be given to pregnant people between 32 and 36 weeks gestational age.

Drug Shortage

- Since Dec. 21 st , 2024, in Canada, there is a drug shortage of the monoclonal antibody Nirsevimab 100mg, this dose is used for infants with a body weight ≥ 5kg. Estimated end date for drug shortage March 30th, 2025.
- Since Jan. 20 th , 2025, in Canada, there is a drug shortage of the monoclonal antibody Nirsevimab 50mg, this dose is used for infants with a body weight < 5kg. Estimated end date for drug shortage March 30th, 2025.

NACI recommends building towards a universal RSV immunization program for all infants. At this time, Nirsevimab is preferred over RSVpreF.

- Program introduction could occur in stages depending on access to supply, cost-effectiveness, and affordability of available options.
- If it is anticipated that Nirsevimab will not be administered to an infant, RSVpreF may be considered for administration to the pregnant person between 32 and 36 weeks' gestation.
- Currently in Canada, since we are experiencing a drug shortage of Nirsevimab and if it is anticipated it may not be available to give to the newborn in your jurisdiction, RSVpreF should be considered for administration to the pregnant person between 32 and 36 weeks' gestation.
- Currently there is no drug shortage for RSVpreF.

Implementation and Accessibility

For both the RSV vaccine (RSVpreF) and the monoclonal antibody (Nirsevimab) to be effective, NACI stresses the need for widespread accessibility and integration into routine prenatal care. Healthcare providers are encouraged to educate expectant mothers about the benefits of these protective measures and ensure that they are readily available. Public health policies for prenatal care recommendations for all pregnant people should support the inclusion of choice for pregnant people to make informed shared decisions, giving the option of either receiving the maternal RSV vaccine with RSVpreF or administration of the monoclonal antibody to infants using Nirsevimab.

NACI's recommendations aim to improve health outcomes for mothers and their infants by promoting the use of RSV protective measures (RSvpreF or Nirsevimab), ultimately reducing the burden of severe respiratory illnesses in newborns.

However, in everyday practice, implementation of these programs is complex as each province has its own schedule, decisions about coverage and overall access. Currently, with the Canadian shortage of Nirsevimab, even in provinces where it is covered, there is confusion. Should a pregnant person get immunized with the RSV vaccine at 32-36 weeks gestation, as it is available? Or should the pregnant person chance waiting for the infant to be born presuming that Nirsevimab will be available at that future time?

Pregnant people and healthcare providers in each province need to discuss options for infant protection from RSV to make the best and safest decision for the individual's baby.

Conclusion

The development and implementation of RSV protection for infants represents a significant advancement in the fight against respiratory syncytial virus. By providing passive immunity to newborns, either through the monoclonal antibody given to the infant or through maternal vaccination, we now have a proactive approach to protecting the most vulnerable population from severe respiratory illnesses. Continued research, public health initiatives, and education efforts are essential to ensure the widespread adoption of the RSV vaccine for pregnant women, ultimately improving health outcomes for mothers and their infants worldwide.