

Using record linkage to demonstrate the benefits of maternal influenza immunisation in Western Australia

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Objectives

Pregnant women are the highest priority for seasonal influenza vaccination. Previous research has found maternal immunisation may not only reduce respiratory infections in mothers and infants, but also prevents adverse birth outcomes. Although the vaccine has been offered to pregnant women under the National Immunisation Program since 2009, no population-based study has yet evaluated its impact on neonatal health in Australia.

Approach

We established a large retrospective cohort of 58,615 births between 2012 and 2013 in Western Australia using data linkage of state-held maternal vaccination records, birth registrations, hospital inpatient records, and midwives notifications. Cox regression models were used to compare the adjusted relative hazard (HR) of adverse birth outcomes and hospital admission for an acute respiratory illness (ARI) by vaccination status.

Results

In total, 5,241 (8.9%) of infants were born to vaccinated mothers. Between 2012 and 2013, there were 23.6 ARI admissions per 1,000 infants <6 months and 2.8 ARI admissions per 1,000 pregnant women. Influenza vaccination was associated with a 51% reduction in stillbirth (aHR: 0.49; 95% CI: 0.29-0.84) and a 25% reduction in infant admissions in the first six months of life (aHR: 0.75; 95% CI: 0.56-0.99). Most of the reduction in ARI admission in infants was observed when vaccination occurred in the third trimester (aHR: 0.68; 95% CI: 0.47-0.95).

Conclusion

Our findings support the neonatal health benefits afforded by maternal influenza immunisation and underscore the importance of offering and promoting influenza vaccination to pregnant women. Considering more than 90% of women who choose to be immunised do so to protect their infant, these results could be used to powerfully promote maternal immunisation.

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