Abstract #28 (0346_0513_000037)

ADHERENCE TO PALIVIZUMAB DOSING SCHEDULE – MANITOBA EXPERIENCE

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Background:
Respiratory Syncytial Virus (RSV) infection is a major cause for infant hospitalization. Passive immunization with palivizumab is given as 5 monthly doses over RSV season to high-risk infants to reduce RSV related hospitalizations. Adherence to dosing schedule optimizes effectiveness.

Objective:
Assess whether location of palivizumab administration is associated with difference in adherence to administration schedule, specifically, whether administration outside of urban centers impacts adherence.

Methods:
Patient demographics, gestational age, risk factor, birth weight and location/dose dates were collected from the Manitoba RSV program (MBRSVP) database from 2007-2018. Primary analysis included all children who received their first 3 doses at the same outpatient clinic, comparing adherence based on location (Winnipeg vs Non-Winnipeg). Secondary analyses looked at children who received 5 doses in the same location, an initial dose in hospital followed by 3 doses at the same outpatient clinic, and finally, a subgroup analysis for adherence in urban, rural, and northern patients.

Results:
Adherence was higher in urban vs rural locations (89% vs 53% respectively). Using a chi-squared test we found location was associated with adherence (=158.68, p<2.2e-16). Using logistic regression, controlling for potential confounders this relationship persisted. Secondary analysis showed similar results. Subgroup analysis revealed differences in adherence of 89% vs 73% vs 40% for the urban, rural and northern groups respectively with =224.66 and p < 2.2e-16. Logistic regression estimates found adherence is higher in children receiving their doses in Winnipeg with an odds ratio of 16 (CI:10.12-28.79, $p=2x10^{-16}$) when compared to Northern communities, and an odds ratio of 4.99 (CI: 2.92-8.65 $p=5.5x10^{-9}$) when compared to rural communities.

Conclusion:
Manitoban patients who receive palivizumab doses in Winnipeg are more likely to be adherent to their dosing schedule. This data suggests that additional strategies and resources are required to assist in improving adherence in Rural and Northern communities.