Epidemiology and Infection

Timing and Predictors of Severe Rotavirus Gastroenteritis among Unvaccinated Infants in Low- and Middle-Income Countries

Joann F. Gruber, Sylvia Becker-Dreps, Michael G. Hudgens, M. Alan Brookhart, James C. Thomas, Michele Jonsson Funk

Supplemental Material

Supplementary Table S1. Predictors of first severe rotavirus gastroenteritis episode in cohort two with and without Kenya and Mali included.

|  |  |  |
| --- | --- | --- |
| Characteristic | Cohort 2\*N = 3,746 Events = 205 | Cohort 2 without Kenya & MaliN = 2,120 Events = 129 |
| Unadjusted†HR (95% CI) | Adjusted†HR (95% CI) | Unadjusted†HR (95% CI) | Adjusted†HR (95% CI) |
| Demographic |  |  |  |  |
|  Female Sex vs. Male (ref) | 0.86 (0.65, 1.13) | 0.86 (0.65, 1.13) | 0.68 (0.48, 0.97) | 0.69 (0.49, 0.98) |
| Exclusively Breastfed vs. Not (ref) | 0.75 (0.48, 1.15) | 0.75 (0.48, 1.16) | 0.95 (0.50, 1.79) | 0.99 (0.52, 1.87) |
| Growth Status |  |  |  |  |
|  Stunted vs. Not (ref) | -- | -- | -- | -- |
|  Underweight vs. Not (ref) | 0.82 (0.52, 1.30) | 0.81 (0.51, 1.29) | 0.98 (0.59, 1.63) | 0.95 (0.57, 1.58) |
|  Wasting vs. Not (ref) | -- | -- | -- | -- |
| Current/Prior Infection vs. None (ref) | 0.99 (0.64, 1.52) | 0.89 (0.56, 1.40) | 1.11 (0.70, 1.77) | 0.98 (0.60, 1.60) |
| Current/Prior Antibiotic‖ Use vs. None (ref) | 1.40 (0.81, 2.41) | 1.41 (0.80, 2.51) | 1.71 (0.97, 3.03) | 1.66 (0.92, 3.01) |
| Routine Vaccines |  |  |  |  |
|  BCG§; No Dose vs. ≥ 1 Dose (ref) | 0.63 (0.34, 1.17) | 0.65 (0.35, 1.21) | 0.67 (0.31, 1.42) | 0.64 (0.29, 1.38) |
|  DTP-HB/HIB¶; No Dose vs. ≥ 1 Dose (ref) | 1.00 (0.71, 1.42) | 1.08 (0.71, 1.66) | 1.18 (0.72, 1.93) | 1.11 (0.65, 1.90) |
|  OPV; ≤ 1 Dose vs. ≥ 2 Doses (ref) | 0.94 (0.70, 1.25) | 0.95 (0.66, 1.36) | 1.15 (0.80, 1.67) | 1.17 (0.78, 1.76) |

\* Six infants from cohort two entered and exited the study before six weeks of age

† Adjusted for country

‡ Less than ten events in each strata

§ Excluding topical antibiotics

‖ Administered prior to enrollment

¶ Or DTaP & HB, which were the standard vaccines given in Asian countries

BCG, Bacillus Calmette–Guérin vaccine; DTP-HB/HIB, diphtheria-tetanus-pertussis-Hepatitis B and -Haemophilus influenza B vaccines; DTaP, diphtheria and tetanus toxoids and acellular pertussis vaccine; HB, Hepatitis B vaccine; OPV, oral polio vaccine

There were differential patterns in lost to follow-up within some strata of factors in cohort one (Supplementary Table S2). There were more infants lost to follow-up who were stunted versus not and those with one or fewer doses of OPV versus at least two doses at enrollment.

Supplementary Table S2. Distribution of characteristics by follow-up status.

|  |  |  |
| --- | --- | --- |
| Characteristic | Infants with Complete Follow-Up, N (%) | Infants Lost to Follow-up, N (%) |
| Female Sex (vs. Male) | 655 (49) | 128 (46) |
| Growth Status |  |  |
|  Stunted (vs. Not) | 279 (21) | 77 (27) |
|  Underweight (vs. Not) | 57 (4) | 16 (6) |
|  Wasting (vs. Not) | 54 (4) | 13 (5) |
| Current/Prior Infection (vs. None) | 48 (4) | 19 (7) |
| Current/Prior Antibiotic Use (vs. None) | 117 (9) | 31 (11) |
| Routine Vaccination |  |  |
|  No BCG (vs. ≥ 1 Dose) | 57 (4) | 21 (7) |
|  No DTP-HB/HIB (vs. ≥ 1 Dose) | 1,330 (100) | 280 (100) |
|  ≤ 1 Dose OPV (vs. ≥ 2 Doses) | 138 (10) | 52 (19) |

BCG, Bacillus Calmette–Guérin; DTP-HB/HIB, diphtheria-tetanus-pertussis-Hepatitis B and -Haemophilus influenza B vaccines; DTaP, diphtheria and tetanus toxoids and acellular pertussis vaccine; OPV, oral polio vaccine