Table 1. Characteristics of the Sample by Wheeze Phenotype

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Wheeze Phenotype** | | | | | | | | **All** | |  |
| . | **Never**  N=1,154 (62.4%) | | **Early-Onset Transient**  N=379 (20.5%) | | **Early-Onset Persistent**  N=144 (7.8%) | | **Late-Onset**  N=172 (9.3%) | | N=1,849 (100%) | |  |
|  | Mean/  Percent | SD | Mean/ Percent | SD | Mean/ Percent | SD | Mean/  Percent | SD | Mean/  Percent | SD | *p* |
| *Prenatal life events %* |  |  |  |  |  |  |  |  |  |  | <0.001 a |
| Low: first tercile | 34.5 |  | 28.5 |  | 27.0 |  | 28.5 |  | 32.1 |  |  |
| Medium: secondtercile | 33.2 |  | 30.3 |  | 29.2 |  | 23.8 |  | 31.4 |  |  |
| High: thirdtercile | 32.3 |  | 41.2 |  | 43.8 |  | 47.7 |  | 36.5 |  |  |
| *Postnatal life events %* |  |  |  |  |  |  |  |  |  |  | <0.001 a |
| Low: first tercile | 37.1 |  | 25.6 |  | 20.8 |  | 29.7 |  | 32.7 |  |  |
| Medium: secondtercile | 33.2 |  | 31.1 |  | 38.2 |  | 33.1 |  | 33.2 |  |  |
| High: thirdtercile | 29.7 |  | 43.3 |  | 41.0 |  | 37.2 |  | 34.1 |  |  |
| *Candidate mediators* |  |  |  |  |  |  |  |  |  |  |  |
| Mother smoked in pregnancy % | 16.0 |  | 23.7 |  | 21.5 |  | 22.1 |  | 19.6 |  | 0.044 a |
| Secondary smoke exposure, hrs./week | 1.58 | 6.54 | 3.18 | 10.40 | 2.63 | 8.56 | 2.23 | 7.85 | 2.03 | 7.78 | 0.008 b |
| Child breastfed <4 months % | 51.7 |  | 60.2 |  | 53.5 |  | 51.2 |  | 53.5 |  | 0.035 a |
| Child lower respiratory tract infection % | 41.1 |  | 60.7 |  | 57.9 |  | 45.9 |  | 46.8 |  | <0.001 a |
| Child allergy % |  |  |  |  |  |  |  |  |  |  |  |
| *Demographic background* |  |  |  |  |  |  |  |  |  |  |  |
| Maternal age, years | 26.29 | 4.90 | 25.86 | 4.47 | 25.79 | 4.18 | 26.35 | 5.14 | 26.17 | 4.79 | 0.331 b |
| Maternal education, years | 12.59 | 2.38 | 12.3 | 2.41 | 12.38 | 2.53 | 12.37 | 2.35 | 12.48 | 2.40 | 0.066 b |
| Child gender: boy % | 48.9 |  | 60.4 |  | 59.0 |  | 53.5 |  | 52.5 |  | <0.001 a |
| Singleton % |  |  |  |  |  |  |  |  |  |  |  |
| Brno region % | 95.8 |  | 92.1 |  | 95.1 |  | 95.9 |  | 95.0 |  | 0.031 a |
| *Other characteristics* |  |  |  |  |  |  |  |  |  |  |  |
| Maternal history of allergy % | 26.2 |  | 27.4 |  | 34.7 |  | 28.9 |  | 27.3 |  | 0.182 a |
| Maternal history of asthma % | 2.4 |  | 3.4 |  | 6.9 |  | 3.5 |  | 3.1 |  | 0.028 a |
| First child % | 39.8 |  | 33.5 |  | 31.3 |  | 40.7 |  | 37.9 |  | 0.044 a |
| Child birth weight <2,500g % | 3.8 |  | 3.7 |  | 3.5 |  | 4.1 |  | 3.8 |  | 0.994 a |

SD=standard deviation shown for continuous variables. P-values are from tests comparing wheeze phenotypes on each sample characteristic: a Chi-square test

b Simple multinomial logistic regression. Source: European Longitudinal Study of Pregnancy and Childhood-Czech Republic (ELSPAC-CZ).

Table 2. Unadjusted and Adjusted Relationships between Perinatal Life Events and Wheeze Phenotype

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Early-Onset Transient Wheeze** | | | | | | **Early-Onset Persistent Wheeze** | | | | | | **Late-Onset Wheeze** | | | | | |
|  | Unadjusted relationship | | | Adjusted relationship | | | Unadjusted relationship | | | Adjusted relationship | | | Unadjusted relationship | | | Adjusted relationship | | |
|  | RRR | 95% CI | *p* | RRR | 95% CI | *p* | RRR | 95% CI | *p* | RRR | 95% CI | *p* | RRR | 95% CI | *p* | RRR | 95% CI | *p* |
| *Prenatal life events* | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Low: first tercile (ref.) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Medium: secondtercile | 1.11 | (0.82-1.49) | 0.505 | 1.16 | (0.85-1.58) | 0.341 | 1.12 | (0.71-1.77) | 0.630 | 1.17 | (0.74-1.87) | 0.502 | 0.87 | (0.56-1.35) | 0.532 | 0.86 | (0.55-1.34) | 0.513 |
| High: thirdtercile | 1.54 | (1.16-2.05) | 0.003 | 1.44 | (1.06-1.95) | 0.020 | 1.72 | (1.13-2.63) | 0.012 | 1.56 | (0.99-2.44) | 0.053 | 1.79 | (1.22-2.61) | 0.003 | 1.69 | (1.13-2.53) | 0.010 |
| *Postnatal life events* | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Low: first tercile (ref.) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Medium: secondtercile | 1.36 | (1.01-1.84) | 0.046 | 1.27 | (0.93-1.74) | 0.131 | 2.05 | (1.29-3.26) | 0.003 | 2.08 | (1.29-3.35) | 0.003 | 1.25 | (0.84-1.87) | 0.279 | 1.18 | (0.78-1.78) | 0.434 |
| High: thirdtercile | 2.11 | (1.58-2.82) | <0.001 | 1.74 | (1.28-2.36) | <0.001 | 2.45 | (1.55-3.90) | <0.001 | 2.01 | (1.23-3.26) | 0.005 | 1.57 | (1.06-2.32) | 0.026 | 1.29 | (0.85-1.95) | 0.238 |

RRR=relative risk ratio, reference category never wheeze, multinomial logistic regression. CI=confidence interval. Ref.=reference category. Adjusted models include prenatal smoking, breastfeeding <4 months, secondary smoke exposure, lower respiratory tract infections, maternal age and its square, maternal education, child sex, singleton birth, residential region, maternal history of asthma, and parity. Source: European Longitudinal Study of Pregnancy and Childhood-Czech Republic (ELSPAC-CZ). N=1,849.

Table 3. Adjusted Relationships between Perinatal Life Events, Smoking, Breastfeeding, Secondary Smoke Exposure, Respiratory Infections, and Allergies

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | **Outcome** |  |  |  |
|  | **Prenatal smokinga** | **Postnatal life eventsb, d** | **Breastfeeding <4 monthsa** | **Secondary smoke exposure**c | **Lower respiratory tract infectiona** | **Allergya** |
| Prenatal Life Eventse |  |  |  |  |  |  |
| Low: first tercile (ref.) |  |  |  |  |  |  |
| Medium: secondtercile | 0.21 (-0.10-0.52) | 0.13 (-0.14-0.40) | -0.07 (-0.31-0.18) | -0.41 (-1.27-0.44) | -0.02 (-0.26-0.21) | 0.16 (-0.32-0.63) |
| High: thirdtercile | 0.24 (-0.07-0.55) | 0.77 (0.49-1.06)\*\*\* | -0.16 (-0.41-0.08) | -0.21 (-1.22-0.79) | -0.12 (-0.36-0.12) | 0.12 (-0.36-0.60) |
| Postnatal Life Eventse |  |  |  |  |  |  |
| Low: first tercile (ref.) |  |  |  |  |  |  |
| Medium: secondtercile | -- | -- | 0.37 (0.13- 0.62)\*\* | 0.45 (-0.19-1.10) | 0.27 (0.03-0.50) | 0.11 (-0.37-0.60) |
| High: thirdtercile | -- | -- | 0.26 (-0.01-0.51)\* | 1.34 (0.37-2.30)\*\* | 0.42 (0.18-0.66)\*\* | 0.35 (-0.13-0.92) |

Unstandardized coefficients and 95% confidence intervals in parentheses. a Binary logistic regression model. b Multinomial logistic regression model. c Linear regression model. d Comparison between the first and third tercile of postnatal life events. e Reference category = first tercile. All models adjust for maternal age and its square, maternal education, child sex, residential region, maternal history of asthma and allergy, and parity. Each model further adjusts for outcomes not used as the dependent variable in this model. Source: European Longitudinal Study of Pregnancy and Childhood-Czech Republic (ELSPAC-CZ). N=1,849

\* p<0.05 \*\* p<0.01 \*\*\* p<0.001