**Main Findings:** Among high risk, urban children, maternal depression in early life is positively associated with wheezing phenotypes, and these associations are strongest for the medium wheezing phenotype. Maternal stress and depression in early life is positively related with higher number of colds in early life.

**METHODS**

- The Urban Environment and Childhood Asthma Study examined a birth cohort of children at high risk for asthma residing in low-income urban neighborhoods.
- Latent class mixed modeling was used to identify six respiratory phenotypes through age ten years using longitudinal trajectories of wheezing, atopy, and lung function.
- Six respiratory phenotypes were identified: 1) low wheeze-low atopy (LW-LA), low to minimal wheezing and low to minimal allergic sensitization; 2) low wheeze-high atopy (LW-HA), intermediate allergic sensitization that increased over time and little or no wheezing; 3) transient wheeze-low atopy (TW-LA), wheezing in early life that resolved early and with minimal allergic sensitization; 4) moderate wheeze-low atopy (MW-LA), wheezing that diminished over time and little or no allergic sensitization; 5) moderate wheeze-high atopy (MW-HA), wheezing that diminished over time with allergic sensitization, and 6) high wheeze-high atopy-low lung function (HW-HA-LF), high rate of wheezing illnesses with allergic sensitization and airway obstruction.
- Prenatal and early life (through age three years) maternal stress and depression scores were analyzed as predictors of respiratory phenotypes at age 10 (logistic regression), number of self-reported colds (linear regression) and detection of respiratory viruses (Poisson regression).

**RESULTS**

**Figure 1. Association of maternal stress and depression scores with respiratory phenotypes.**

Scores for maternal stress (A) and depression (C) obtained during the prenatal period and at intervals until year 3 were plotted for the six respiratory phenotypes.

**Figure 2. Relationship of stress and depression quartiles to respiratory illnesses.**

Quartiles of cumulative scores (prenatal through year 3) for maternal depression (A) and stress (B) were compared to the total number of colds reported for the children during the first three years of life. The lines represent the means and box plots represent the medians and the 95% confidence interval, respectively.

**CONCLUSIONS:** Among high risk, urban children, higher levels of early life maternal stress and depression were associated with an increased number of respiratory illnesses and the MW-LA phenotype. These results suggest that maternal stress and depression could increase susceptibility to viral illnesses in early life, recurrent wheeze and some forms of childhood asthma.

**FUNDING SOURCES:**

This project has been funded in whole or in part with Federal funds from the National Institute of Allergy and Infectious Diseases, National Institutes of Health, under Contract numbers 1UM1AI114271-01, UM2AI117870. Additional support was provided by the National Center for Research Resources, National Institutes of Health, under grant N01RR00008L1.