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Prenatal Maternal Stress and Development of Atopic Diseases in the Child: a Systematic Review of Observational Human Studies

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Background: Atopic disorders, including asthma, dermatitis and rhinoconjunctivitis are the most common chronic diseases of childhood. Numerous studies have investigated the relationship between immune dysregulation and prenatal factors, including psychological stress. The association between prenatal maternal stress and atopy, however, has never been systematically reviewed.

Aims: To systematically review all observational studies on the association between prenatal maternal stress and atopic disorders or predisposition in childhood.

Objectives: To identify all observational studies in humans that compared the prevalence of one or more atopic disorders or predispositions in children of exposed and unexposed mothers. To critically evaluate the quality and validity of the published literature.

Methods: PubMed, EMBASE, PSYCInfo and Scopus databases were searched and relevant studies were identified and assessed accordingly to the PRISMA-criteria.

Results: Fifteen studies met the inclusion criteria, many of which examined the association between prenatal stress and multiple disorders. Preliminary results suggest that children of mothers who experienced stress during pregnancy have a higher risk of developing asthma, dermatitis and rhinoconjunctivitis than children of unexposed mothers.

Conclusion: The impact of psychological stress on immune function appears consistent regardless of stress-definition. The varying stress- and outcomes measures make it difficult to compare results from the studies. Future research should focus on whether certain disorders are more susceptible than others, as well as if certain stressor-types or times during pregnancy are more critical.

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