

DO METEOROLOGICAL CONDITIONS PLAY A ROLE IN OCCURENCE OF PREECLAMPSIA ?

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Background: Preeclampsia is a major obstetric complication and a leading cause of morbidity and death among mothers and infants. Previous attempt to study influence of meteorological parameters on occurrence of preeclampsia yielded contradictory results, with some studies evidencing correlations with temperature or humidity.

Objective: To determine the influence of meteorological conditions near date of conception on the occurrence of preeclampsia

Methods: Maternal, obstetrical and neonatal data on all pregnancies occurring in the French department of Yvelines were prospectively recorded between January 2007 and June 2010. Daily temperature, humidity, rainfall and sunlight intensity were provided by the French meteorological agency (Meteo France) then averaged near the Estimated Date of Conception (EDC): ten days around the EDC, ten days and thirty days after the EDC. Associations between occurrence of preeclampsia in singleton pregnancies and meteorological parameters were investigated with Poisson regression models adjusted on maternal age; past history of preterm birth and caesarean section; previous pregnancy; gender of child ; urban/rural profile of place of living.

Results: Preeclampsia occurred in 353 of the 46339 singleton pregnancies recorded during the study period (0.8%). The incidence of preeclampsia was not different according to month of conception. Furthermore, no meteorological parameters seemed to influence occurrence of preeclampsia, whatever the timing considered. At last, place of living (urban vs rural) did not influence the risk of preeclampsia.

Conclusion: In our cohort study - adequately powered to detect OR as small as 1.5 – there was no evidence of any influence of temperature, humidity, rainfall nor sunlight intensity near the EDC on the risk of preeclampsia. However, incidence of preeclampsia was lower than incidences generally measured in other studies (from 1.8 to 7%). In order to understand the association between meteorological conditions and adverse events in pregnancies, outcomes and measures of meteorological factors must be more accurately defined.