

# CLIMATE AND BACTERIAL INFECTIONS DURING PREGNANCY; PRESENT IMPLICATIONS AND FUTURE CONCERNS

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**Background and Aims:** Maternal bacterial infections during pregnancy are both frequent and can be associated with serious complications like maternal morbidity and mortality, and life-threatening neonatal infections. The available evidence on the impact of climate on human bacterial infections particularly during pregnancy is very limited. This study was aimed to investigate the impact of climatic factors on maternal group B streptococci (GBS) colonisation during pregnancy.

**Methods:** This study was based on a cohort of births (N=7976) that occurred in a major university hospital in Barcelona during 2001-2005. Averages of daily temperature, relative humidity, and heat index (perceived temperature) over the weeks 32-36 (one month prior to sampling) of pregnancy measured by the closest (aerial distance) of three meteorological monitors to the maternal residential place were assigned to each subject. Logistic regression models were developed to extract adjusted odds ratios for continuous and categorical (quartiles) exposures.

**Results:** We detected an increased risk of GBS colonisation due to increase in daily average temperature (adjusted odds ratio (95% confidence interval (CI)) of 1.02 (1.01, 1.03)), relative humidity (1.03, 95% CI (1.01, 1.05)), and heat index (1.01, 95% CI (1.01, 1.02)). Treating exposures as categorical variables resulted in similar findings.

**Conclusions:** We found elevated risk of maternal GBS colonisation during pregnancy in association with increase in ambient temperature and humidity. If confirmed by future studies, our findings are important as they provide guidance for clinicians and policy makers for providing targeted primary and secondary preventions and in time, it offers a basis for assessing the impact of possible changes in future climate on maternal infections during pregnancy and their consequent complications.