

# Diagnosis of tuberculosis is increased in postpartum women

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The incidence of tuberculosis (TB) diagnosis is significantly increased in mothers postpartum, suggesting a potential new population to target for screening, according to a new UK-wide cohort study.

In the joint study between the [Health Protection Agency](#) and the University of [East Anglia](#), researchers analyzed data on all women with pregnancies between 1996 and 2008 from the General Practice Research Database, which contains records from 460 practices across the UK, representing 5.5 percent of the UK population. The findings were published online ahead of print publication in the American Thoracic Society's [American Journal of Respiratory and Critical Care Medicine](#).

"Ours is the first primary care based cohort study to quantify the risk of TB during pregnancy and postpartum," said Dominik Zenner, degree? consultant in public health, [Respiratory Diseases](#) Department at the Health Protection Agency. "Although we found a significantly increased risk of TB in the six months following pregnancy, but not during pregnancy, the risk during pregnancy is almost certainly also increased."

The researchers estimated incidence rates for TB in pregnancy, six months postpartum and outside of pregnancy, and modelled adjusted incidence rate ratios (IRRs) in a retrospective cohort study. They also performed a nested self-controlled case series (SCCS) analysis, adjusting for all non-time-dependent confounders, such as country of origin and ethnicity. In the SCCS analysis, pregnant women with TB were selected from the cohort, and [incidence rates](#) (IRs) in pregnancy and post-partum

were compared with rates outside pregnancy.

A total of 192,801 women with a total of 264,136 pregnancies were included in the [cohort study](#). Of 177 TB events that occurred during the study, 22 occurred during pregnancy and 22 occurred in the 180 days after pregnancy. The crude TB rate for the combined pregnancy and post-partum period was 15.4 per 100,000 person years, which was significantly higher than the rate outside of pregnancy (9.1 per 100,000 person years,  $p=0.02$ ). After adjustment for age, region and socio-economic status, post-partum TB risk was significantly higher than TB risk outside pregnancy (IRR 1.95, CI 1.24-3.07), whereas no significant increase during pregnancy was observed (IRR 1.29, CI 0.82-2.03).

These observations were confirmed in the SCCS analysis. Adjusting for all non-time bound confounders, the time period of observation and patients' age, the IRR of TB during pregnancy (1.03, CI 0.64-1.65) was not significantly increased compared with the risk outside of pregnancy. However, the TB risk was significantly increased in the 6 month period following pregnancy (IRR 1.61, CI 1.01-2.58,  $p=0.04$ ).

The study had a few limitations, including its observational design. Administrative delay between TB diagnosis and recording of the diagnosis may have occurred. Diagnostic delays may also occur during pregnancy. Immunological changes during pregnancy gradually increase TB susceptibility and then gradually normalize after delivery. The combination of these factors may account for the failure to show a significantly increased TB risk during pregnancy in this study.

"The incidence of TB diagnosis is significantly increased post-partum, probably reflecting an increase in TB incidence during [pregnancy](#)," concluded Dr. Zenner. "Given our results, targeted screening of pregnant and post-partum women in high-risk groups may be warranted, given that delays in treatment initiation are associated with poorer outcomes

for both mothers and their children."

Provided by American Thoracic Society

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