Individual Participant Data Meta-analysis of Zika-virus related cohorts of pregnant women (ZIKV IPD-MA)

Current Project Brief

Objectives and Background

The proposed individual participant data-meta-analysis (IPD-MA) will combine de-identified, participant-level cohort data from different populations of pregnant women to identify and quantify the relative importance of different predictors of congenital Zika syndrome (CZS). Individual participant data have a number of analytic benefits over aggregate data meta-analysis (AD-MA), knowledge synthesis that combines study-level measures of effect. Individual participant data (IPD) allow for more consistent control of confounders, and facilitate the assessment of effect measure modification and sensitivity analyses. In contrast to aggregate data meta-analysis, the use of IPD will allow us to fully explore subject-level sources of heterogeneity in the association between congenital Zika infection and pregnancy complications and will facilitate the identification of the subgroups of women (i.e. DENV co-infected women; women with DENV or WNV antibodies from a prior infection) at the highest risk of experiencing ZIKV-related pregnancy complications.

The specific objectives of the proposed IPD-MA are to:

1. Estimate the absolute and relative risks of intrauterine fetal demise, stillbirth, primary microcephaly, and other components of congenital Zika syndrome for women who do and do not experience congenital Zika infection by gestational age at time of infection, clinical or subclinical illness, concurrent or prior arbovirus exposure (DENV, Yellow Fever vaccination, ZIKV), and other co-factors.

2. Identify factors that modify women’s risk of adverse ZIKV-related fetal or neonatal outcomes, including intrauterine fetal demise, stillbirth, and primary microcephaly.

3. Develop and validate a risk prediction tool to inform decision making by pregnant women, couples planning a pregnancy, and healthcare providers, and/or resource mobilization.

The ZIKV Individual Participant Data Consortium has been formed to identify, collect and synthesize IPD from cohorts of pregnant women that measure ZIKV infection during pregnancy and foetal and neonatal outcomes.

Geographic location

Latin America

Main deliverables

IPD-MA study protocol to be submitted to a peer reviewed journal

Sources of funding

Wellcome Trust

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