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Evaluation of maternal medications and diseases recorded in Northern Ireland Maternity System (NIMATS) database compared to NI Enhanced Prescribing Database (EPD): a data linkage validation study

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Background

There is great potential to use routinely collected patient health records for research if the quality of data is sufficient for this purpose.

Objective

To assess the accuracy of information on medications and maternal diseases reported by the mother and recorded in the NI Maternity System (NIMATS) database compared to electronic prescriptions issued by the General Practitioner and recorded in the Enhanced Prescribing Database (EPD).

Method

A cross-sectional data linkage validation study was conducted through the Honest Broker Service. The NIMATS database, EPD and NI Multiple Deprivation Measure (MDM) were linked for all births in NI with a pregnancy booking interview between 1st April 2010 and 30th June 2016. Information on medications and illnesses recorded in NIMATS were compared to prescription data recorded in EPD.

Findings

Between April 2010 and June 2016, 139,687 pregnant women were linked to EPD and the NIMDM. In NIMATS, 94.4% (131,909) of women reported taking medications in the first trimester of pregnancy compared to 63.5% (88,693) in the EPD. The most common exposures in both databases were vitamins, folic acid and iron. Use of some medications varied by maternal age for example antibiotics were more common among younger mothers while cardiac medications were more common among older mothers. Excluding vitamins, folic acid and iron, 27.2% (14,786) of pregnancies with a medication recorded in NIMATS had a current disease recorded compared to 30.3% (20,574) of those in EPD.

Conclusions

Medication exposure rates differ depending on the data source used. NIMATS includes over-the-counter and hospital prescribed medications but may be subject to maternal recall bias. The EPD records prescribed medications but it is unknown if the woman took these. For both NIMATS and EPD, less than a third of pregnancies with a medication exposure have a disease recorded suggesting under recording of maternal disease in NIMATS.

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