Asthma medication prescribing before, during and after pregnancy: a study in 7 European regions

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Background

The prevalence of asthma during pregnancy has been estimated at 4-8% in Europe, making it one of the most common, potentially serious, medical complications in pregnancy. To achieve good disease control, pregnant women and those considering becoming pregnant are generally recommended to continue taking their asthma medicines.

Objective

To explore asthma medicine prescribing patterns before, during and after pregnancy as recorded in seven European population-based electronic healthcare databases.

Methods

A common protocol was implemented across seven databases in Denmark, Norway, the Netherlands, Italy (Emilia Romagna/Tuscany), Wales, and the Clinical Practice Research Datalink representing the rest of the UK. An overview of the seven databases can be found in Table 1. Women with a pregnancy starting and ending between 2004 and 2010, which ended in a delivery, were identified. Asthma medicine prescriptions issued (UK) or dispensed (non-UK) during pregnancy and/or the year before and after pregnancy were identified. Prescribing patterns were analysed and compared between databases and over calendar time.

Results

In total, 1,165,435 deliveries were identified. The prevalence of asthma medicine prescribing during pregnancy was highest in the UK and Wales databases (9.4% [CI95 9.3-9.6] and 9.4% [CI95 9.1-9.6] respectively) and lowest in the Norwegian database (3.7% [CI95 3.7-3.8]). In the year before pregnancy, the prevalence of prescribing remained constant in all regions. Prescribing peaked during the 2nd trimester of pregnancy in all databases and was at its lowest during the 3 months following delivery (Figure 1). During pregnancy a decline was observed in all regions except the UK, in the prescribing of long-acting beta-2-agonists (LABA) (Figure 2).

Figure 1. Percentage of deliveries between 2004 and 2010 where the woman received a prescription for any asthma medicine during 31 of the time periods of interest

Italy was the only region where the prevalence of inhaled corticosteroid (ICS) prescribing was higher than that of short-acting beta-2-agonists (SABAs). The specific products most commonly prescribed in each medicine class varied between regions; for example, beclometasone was the most commonly prescribed ICS in the UK, Wales and Italian databases, in Denmark it was budesonide and in Norway both products were prescribed in equal measure. Norway was the only region where the extent of prescribing of ICS in a fixed-dose combination with a LABA was higher than that of ICS products not part of a fixed-dose combination. During the 7 year period only small changes in prescribing patterns were observed.

Figure 2. Percentage of deliveries between 2004 and 2010 where the woman received a prescription for a long acting beta-2-agonist during 31 of the time periods of interest

Conclusion

Differences were found in the prevalence of prescribing of asthma medicines during and surrounding pregnancy and in the specific products prescribed, however inhaled beta-2-agonists and inhaled corticosteroids were the most popular therapeutic regimens in all regions. The decline observed in the prescribing of long-acting beta-2-agonists during pregnancy in some regions, may indicate that clinicians and pregnant women worry about using these rather new inhaled medications during pregnancy.