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Impact of Pregnancy on Psychotropic Medication Prescription: a French Cohort Study

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Abstract – Objectives. To determine if and when prescription of psychotropic medication in women is modified by pregnancy. **Method.** Psychotropic prescription of 87 213 pregnant women affiliated with the French General Health System was examined. Period of analyses lasted 17 months to cover 4 months before and after pregnancy. A comparable cohort of 87 213 non pregnant women constituted the control group. **Results.** More than half of pregnant women to whom a psychoactive drug was prescribed were novel users during all three trimesters and after delivery. Prevalence of psychotropic medication before pregnancy is comparable to that of non-pregnant women. Rate of psychotropic medication during the peripartum stayed high, even though it decreased by half during the first trimester, showing a "pregnancy impact effect". **Conclusions.** Data show a dramatic impact of pregnancy. More information on specific patterns of prescription needs to be gained in order to establish decision-making models for psychotropic prescription during pregnancy.

Mots clés :
prescription de psychotropes ; grossesse ; postpartum ; antepartum

Résumé – Impact de la grossesse sur la prescription de psychotropes : une étude de cohorte française. **Objectifs.** Déterminer si et comment la grossesse modifie la prescription de psychotropes. **Méthode.** Quatre vingt sept mille deux cent treize femmes enceintes affiliées à sécurité sociale ont été incluses. La période d'analyse couvre les 9 mois de grossesse, 4 mois avant et 4 mois après. L'analyse inclut une cohorte témoin comparable de 87 213 femmes non enceintes sur la même période. **Résultats.** Pour chaque trimestre de la grossesse et après la grossesse, plus de la moitié des femmes enceintes auxquelles ont été prescrits des psychotropes n'en prenaient pas avant. Avant la grossesse, la prévalence de la prescription de psychotropes est comparable à celle du groupe témoin. La prescription durant la grossesse reste élevée, même si on observe une diminution durant la grossesse. **Conclusions.** Les données témoignent d'un impact important de la grossesse sur la prescription de toutes les catégories de psychotropes étudiées, invitant à une réflexion sur la mise en place de modèle de décision quant au maintien ou non des psychotropes durant la grossesse.

Abbreviations: see end of article.

1. Introduction

Prescription of psychotropic medication during pregnancy is generally made on a benefit/risk based assessment, weighing respective necessity to prescribe and/or maintain women on psychotropic medication *versus* negative impact on fetus and neonate.[1-4] Good practice rules are established in each country, generally based on retrospective studies.[5-7] Pharmacovigilance is essential since for obvious ethical reasons, trials exclude populations such as pregnant women and newborns. It is therefore essential, from a public health point of view, to appropriately assess the exposure of women to psychotropic medication and to evaluate if prescriptions are coherent with current state of the art knowledge on medication.

Pregnancy has long been considered a period of bliss during which no psychiatric disorder could appear or even that preexisting psychopathological conditions were momentarily miraculously interrupted. Numerous studies have now shown that not only do psychiatric disorders (bipolar disease, schizophrenia) follow their course during pregnancy, but when adequate medication

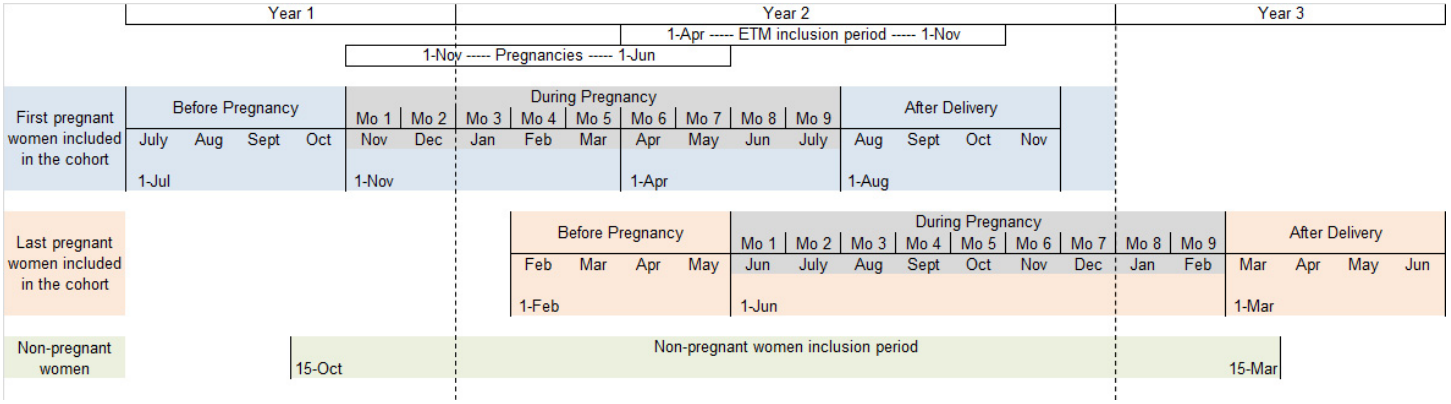

Fig. 1. Gantt's chart.

is discontinued relapse occurs.[8,9] For example, when there exists a past history of depressive disorder, pregnancy and the postpartum are periods of heightened risk of occurrence of a recurrent episode.[10]

In addition, not only is it essential to procure adequate treatment for future mothers in order to ensure their own mental health, it is crucial for their infants. In case of major psychiatric episodes, postpartum disorders will negatively impact not only the mother but both the infant and the mother-infant relationship through different mechanisms.[11]

Enhancing "good practice" rules of prescription of psychotropic medication during the immediate pregravid period, pregnancy and lactation seems therefore of significant importance. To address this critical issue, a description of the current use of psychotropic medication during this period is a first essential step.

We therefore undertook a study in the Parisian urban and suburban areas describing the use of psychotropic medication in women before pregnancy, during each trimester, and after birth, in order to both provide an estimate of prescription use of psychotropic medication and to approach how the course of pregnancy and birth modify the prescription of these medications. Ultimately, we aim to provide a more comprehensive picture of the use of psychotropic medications during pregnancy and therefore to help adjust public health messages.

2. Methods

The study concerns the female population of the Paris Suburban area: Ile-de-France. Pregnant women and non-pregnant women were included in the analysis from the general French Insurance Health system (Caisse primaire d'Assurance maladie de la Sécurité sociale, CPAM) database. The pregnant women we targeted all subscribed to the General Health System on August 29th, 2006. They were selected because they were registered as having 100% health care coverage due to pregnancy between June 1st, 2005 and December 31st, 2005. All pregnant participants had begun their pregnancy between January 1st and August 1st, 2005. Inclusion period lasted 7 months. Therefore, we included all women who were recorded pregnant between January 1st and August 1s, 2005, *i.e.* a cohort of 87 213 women. This cohort represented 19% of the women registered as pregnant over the same period in France (N = 458 421). Non pregnant women affiliated to the General Health system on August 26th, 2006 were randomly selected in each age group. The group was comparable in size (N = 87 213), and was not different on criteria of age and geographical origin. Periods of analyses considered lasted 17 months and were studied as follows: 4 months before beginning of pregnancy, first, second and third trimester, and 4 months period after birth. For the non-pregnant group, the 17 months were identical, *i.e.* from December 14th, 2004 to May 15th, 2006, and were divided in five periods similar to those of pregnant women (respectively 4 months, 3 months, 3 months, 3 months and 4 months). The calendar period is discribed in figure 1.

For all women, dates were set by calculating the beginning of the 100% reimbursement period *i.e.* day 1 of the beginning of the 6th month of pregnancy and the date of birth was calculated at the end of the period of 100% of reimbursement minus 14 days (since the 100% rule goes to delivery or date of birth which can be extended to two weeks post-term, according to the CPAM).

Date of beginning of pregnancy was calculated retrospectively by subtracting 153 days to the start of the 100% health coverage period (date minus 5 months). Each sub-period was set using the same method *i.e.* start of 100% health coverage and delivery as reference.

The information provided by the database was: 1) use of psychotropic medication during each studied period and during the whole of the 17 month period; 2) number of psychotropic drugs prescribed and their type (antipsychotic, antidepressant, tranquilizer, mood stabilizer). Date of prescription and of delivery of the prescribed drug was notified (*i.e.* only drugs delivered to patients and presented for filling were recorded and not prescription from physicians).