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Medication before and during pregnancy: data from Generation XXI birth cohort

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Abstract

Introduction: Drug use during pregnancy should be carefully analysed in order to try to establish safe practice and avoid usage of dangerous substances. There is little or no evidence for safe use in pregnancy in relation to many habitually used drugs however, recent studies have shown elevated levels of drug usage among pregnant women.

Objective: To assess the prevalence of drug use before and during pregnancy and to estimate the maternal determinants of such use among mothers of the Generation XXI birth cohort.

Methods: The present study is based on the Generation XXI cohort, which included 8647 newborns, whose mothers (8495) were recruited at delivery from April 2005 to August 2006 in one of the five public maternity units that cover six municipalities of the metropolitan area of Porto, Portugal. Information on social and demographic characteristics, obstetric and gynecological history, lifestyles and current pregnancy events was obtained using a structured questionnaire during the hospital stay (24-72 hours after the delivery) by trained interviewers. Through this survey we were able to collect information regarding drug use three month before and during pregnancy. All the drugs were classified according to the Anatomical Therapeutic Chemical Classification System (ATC) from the World Health Organization (WHO) and US Food and Drug Administration (FDA) risk classification system. In order to classify the drugs according to the FDA we used Infarmed publications from December 2004 and August 2011.

Results: The prevalence of overall drug use before conception and during pregnancy was respectively 49.2% and 98.3%. In both time periods, 30.8% of women took drugs. Excluding supplements (ATC A11, A12 and B03), the prevalence of drug use before, during pregnancy and in both time periods decreased to 34.9%, 60.2% and 15.3%, respectively. Before pregnancy, 5537 drugs were reported by women while, during the pregnancy this number increased to 27775. In accordance with the ATC system classification the most common preconception drugs used were from category G and B (22.8% and 19.1% of women took at least one drug from these categories). During pregnancy, 95.4% of women reported having used drugs from category B, 66.4% from category A, 19.7% from category N and 16.4% from category J. During pregnancy and according to the 2011 Infarmed publication (based on FDA

classification system), drugs from category A and category B were used by 91.6% and 29.0% of women respectively. Category C was used by 18.9% of the women and category D and X were taken by 8.7% and 0.2% of women respectively. When the 2004 Infarmed publication was used to classify the drugs, the percentage of use for category C and D decreased respectively to 9.1% and 6.8%. Category X remained the same in both publications. Before pregnancy and after adjusting the models, more educated women, primiparous women and those who had chronic diseases were more likely to have used drugs. Excluding supplements, the educational level and parity were no longer associated with drug use, however having reported chronic diseases remained associated in the same way as stated above. Women who lived with a partner were less likely to have used drugs, while those who had not planned the current pregnancy and had smoked before pregnancy were more likely to have used drugs. During pregnancy and after adjusting the models, the use of drugs was less likely to occur in less educated women, those who smoked before pregnancy and in those who were housewives or unemployed. Women, who chose private prenatal care, had more appointments and complications during pregnancy were more likely to have used drugs. After excluding supplements, women with chronic diseases and those who did not plan the current pregnancy were more likely to use drugs. The working condition and the health care system were no longer associated with drug use.

Conclusion: According to our findings, whether we include supplements or not, there is an evident tendency for a greater use of drugs during pregnancy when comparing with the three months before pregnancy. Drug use during pregnancy by women was very common; however, according to the FDA classification system the proportion of women who used drugs from category D and X was low. Before pregnancy, the use of drugs was associated with the existence of a chronic condition. The use of drugs prior to pregnancy was linked with better social profiles when the supplements were included, while when they were excluded, it was associated with worse profiles. During pregnancy, despite the universal use of medicines, similar patterns were observed. These studies are essential for creating prescription guidelines during pregnancy in order to improve medical care.