

## Drugs use during pregnancy at Medani Maternity Hospital, Sudan

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### Abstract

**Background:** There is a limited knowledge on use of drugs during pregnancy including beneficial and possible adverse effects of drugs on both the mother and the fetus.

**Objective:** To investigate epidemiology of use of drugs during pregnancy.

**Methods:** A cross sectional hospital based study at Medani Hospital during the period December 2011. After signing an informed consent, a pre-tested questionnaire was used to gather data from each parturient mother on her age, parity, level of education, antenatal care visits and use of drug during the index pregnancy.

**Results:** The vast majority (334; 98.2%) of the interviewed women used drugs during the index pregnancy. Around ten percent (35; 10.5%) of these women used the drugs in the first trimester of pregnancy. The majority (266; 78.2%) used the drugs in third trimester and the rest used it in the second trimester. The most common drugs used were antibiotics, tonics, antimalarials and antiemetic.

**Conclusion:** There is a very high rate of drug use in this setting. Antibiotics and antimalarials drugs were the most used drugs.

**Keywords:** drugs, pregnancy, antibiotics, antimalarials, Sudan.

Most women use prescribed drugs during pregnancy from categories C, D, or X of the United States Food and Drug Administration risk classification system, therefore this highlights the importance of the need to understand the effects of these medications on the developing fetus and on the pregnant woman<sup>1,2</sup>. There is a limited knowledge on use of drugs during pregnancy including beneficial and possible adverse effects of drugs on both the mother and the fetus. The vast majority of the data on drug exposure during pregnancy are from

the developing countries where the pharmacovigilance and drug registry systems are in place<sup>3,4</sup>. This is not the case in developing countries where the assessment of drug exposure in pregnancy is complicated by high parity and clinical complaints of several endemic diseases such as malaria and schistosomiasis where it is difficult to dissect the disease and the drug adverse effects<sup>5-7</sup>. Furthermore in countries with less resource, recording of drug exposure during pregnancy is inadequate. In most of the developing countries there is no baseline data on birth outcomes that can be used in assessment regarding the effect of these drugs. In sub-Saharan which is endemic for communicable diseases anti-infective drugs are often used during pregnancy, and thus they should always be considered in any drug exposure assessment in these areas<sup>8-10</sup>. The situation may be different where drugs used for chronic diseases are likely to be used by pregnant women in developed countries. The

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current study was conducted at Medani Maternity Hospital in Central Sudan to investigate incidence and type of drugs used during pregnancy.

**Methods:**

This is an observational cross-sectional study conducted at Medani Maternity Hospital in Central Sudan during December 2011. Medani Maternity Hospital is a tertiary care hospital for those women who had antenatal care at the hospital and for those who were referred from the other clinics and hospitals. Women with risk factors or obstetric/medical complications are referred to the hospital. However many women without any significant complications are allowed to deliver at the hospital. After signing an informed consent, a medical officer used a pre-tested questionnaire in the local language (Arabic) to gather data from each parturient mother on her age, parity, level of education, antenatal care visits and use of drugs during the index pregnancy. Then the detailed information on the drugs that were used in pregnancy including type, time of the drug use and the prescriber were taken. Then additional information was obtained through revision of antenatal and admission files and drug prescriptions when available.

**Ethics**

The data in the files of the patients were analyzed anonymously and no personal data were required. The study was approved by the local ethical board of the institution.

**Results:**

The characteristic of these women enrolled in the study were shown in table 1. Out of these 340 interviewed women, 93 (27.4%) and 136 (40%) women were illiterate and of rural residence, respectively. The vast majority

Table 1: The characteristics of the women enrolled in the study

The variable	Mean (SD) [range]
Age, years	27.5 (6.1) [13-42]
Gravidity	2.9 (2.0) [1-10.0]
Parity	1.8 (1.9) [0-9]

(334; 98.2%) of the interviewed women used drugs during the index pregnancy. Around ten percent (35; 10.5%) of these women used the drugs in the first trimester (the first 13 weeks) of pregnancy. The majority (266; 78.2%) used the drugs in third trimester (more than 28 weeks), and the rest used it in the second trimester (14-28 weeks).

The most common drugs used were antibiotics, tonics, antimalarials and antiemetic, (table 2). The mean (SD) of the number of drugs used per woman was 2.9 (1.6). One woman used nine drugs during her index pregnancy. Few (10; 3.0%) women took drugs by themselves, 16 (4.7%) women received the drugs from nurses and the doctors prescribed drugs for the majority (308; 92.2%) of the women.

**Discussion:**

The main finding of the current study was the high rate of drugs used during pregnancy and the most used drugs were antibiotics and antimalarials. Interestingly in our previous report, out of 33 women who had significant bacteriuria, 14 (42.2%) received antibiotic in the index pregnancy<sup>11</sup>. Recently it has been shown that 41% (1276/3105) of participants in Mozambique reported at least one drug exposure during pregnancy<sup>9</sup>. In Nigeria, 11.2% of all prescribed drugs in pregnancy were antimalarials, representing the third most prescribed drug class in this group<sup>10</sup>. Antimalarials drug combinations that include artemisinin derivatives (artemisinin-based combination therapy; ACTs) are now recommended for treatment in most malaria endemic areas<sup>12</sup>. This recommendation includes pregnant women (except during the first trimester). Therefore, there is still very little information on the safety of these drug combinations in pregnancy in this early period of pregnancy<sup>8</sup>.

In the current study ten percent (35; 10.5%) of these women used the drugs in the first trimester of pregnancy. Time of exposure to the drugs during pregnancy is of importance because the period of teratogenesis may be quite short. However, studies investigated these drugs during pregnancy were based on linkage with registers that might be uncertain.

Table 2: drugs used by the pregnant women at Medani Hospital, Sudan (n= 340).

The drug	Number of women	Percentage
Antibiotics	128	37.6
Tonics	319	93.8
Antimalarials drugs	123	36.2
Antiemetic	90	26.5
Dexamethasone	53	15.6
Paracetamol	40	11.8
Antihypertensive	36	10.6
Antifungal	14	4.1
Non steroidal ant inflammatory	9	2.6
Antiulcer	9	2.6
Progesterone	7	2.1
Aspirin	29	8.5
Insulin	12	3.5
Heparin	6	1.8
Progesterone	7	2.1
Herbal	4	1.2
Antiepileptic	3	1.0

This might not be the case for drugs used for chronic illness compared with occasionally used drugs like antibiotics and sedatives<sup>13</sup>. Generally, a teratogen does not uniformly increase the rates of all malformations, but rather tends to increase rates of selected malformations<sup>14</sup>.

As mentioned above there should be a balance between the risks of the disease itself and the drugs used to treat that disease. On the other hand it is sometimes difficult to differentiate whether the adverse pregnancy outcome is related to the disease or the drug used to treat that disease. Hypertension is the most common medical complication of pregnancy and it has serious sequelae during pregnancy. The benefits of drugs (e.g. beta blockers) used extend to both the mother and the infant, and serve to reduce the morbidity that would otherwise result from uncontrolled

hypertension. However, these drugs (beta blockers) are not free of adverse effects on unborn babies<sup>15</sup>.

It worth mentioning that recent studies showed that even drugs that seemingly and obviously free of adverse effects on pregnancy outcomes such as analgesics and antibiotics have adverse effects on the mother and the baby<sup>16, 17</sup>.

#### Conclusion:

In conclusion, we found that a large proportion of women in this setting used drugs during pregnancy and the most of these used drugs were antibiotics and antimalarials.

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