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\textsuperscript{1, 2}. 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

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the developing countries where the
pharmacovigilance and drug registry systems
are in place\textsuperscript{3, 4}. 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\textsuperscript{5-7}.
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\textsuperscript{8-10}. The
situation may be different where drugs used
for chronic diseases are likely to be used by
pregnant women in developed countries. The
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 (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. Recently it has been shown that 41% (1276/3105) of participants in Mozambique reported at least one drug exposure during pregnancy. In Nigeria, 11.2% of all prescribed drugs in pregnancy were antimalarials, representing the third most prescribed drug class in this group. Antimalarials drug combinations that include artemisinin derivatives (artemisinin-based combination therapy; ACTs) are now recommended for treatment in most malaria endemic areas. 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.

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

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.

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.

**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.

**References:**


