A COMPARATIVE STUDY ON PRESCRIPTION PATTERN BETWEEN PUBLIC AND PRIVATE HOSPITAL IN BANGLADESH

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Abstract - Pregnancy is one of the most important and vulnerable period for a woman and her upcoming child. It is of utmost important to ensure a rational prescribing pattern. However, due to dearth of current scientific evidence a gap in knowledge exist about the prescription pattern at this period in different institution. This study aimed to fill this gap by evaluating the pattern of drug prescription from the two tertiary care hospital in Dhaka city. This cross-sectional study was conducted at the outpatient department of Sir Salimullah Medical College and Dhaka National Medical College from January 2017 December 2017. Two hundred pregnant women of 18 years and above attending at the outpatient department of Gynae and obstetrics of Sir Salimullah Medical College and one hundred women of same criteria and same department of Dhaka National Medical College Hospital were interviewed and their prescription were evaluated. The study revealed a significant difference in sociodemographic characteristics among the two institutions. Among the pregnant women who visited the Sir Salimullah Medical College and Mitford Hospital (SSMC and MH) had an average 6.2 drugs in per prescription whereas in Dhaka Medical College Hospital (DNMCH) it was 5.7. Most of the drugs in both institutions were prescribed from FDA Category A. This study gives a brief overview of current prescription pattern and this will help in increasing the awareness of physicians and upcoming mothers and will help policy makers to take necessary steps to improve overall prescribing practice in the country.

Index Terms - Prescribing Pattern, Bangladesh, Pregnancy

I. INTRODUCTION

Pregnancy is a physiological condition that every woman dreams to enjoy. However, it is critical period where considerable about lifestyle modification required and precaution should be taken to avoid complication for the mother and baby. At this time, all medications should be prescribed with specific caution as the physiological state of pregnancy affects the pharmacokinetics of drugs, with attendant risk on the developing fetus (1). Hence, the impact of drugs with its risk should be taken into consideration before a drug is prescribed for pregnant women and clinicians need to follow International guidelines and the safety level of the drug prescription. The drugs have to be safe, efficacious and rationally used(2). Moreover, continuous endeavor is required to reduce medication errors and improving patient safety (1). More than 90% of pregnant women take prescription or nonprescription and social drugs at some point of time during their gestation (3). Unfortunately, about 2%-3% of all death defects are results of the drugs that are taken to treat a disorder or symptom(4). Register based cohort study in Finland revealed 20.4% of women purchased at least one drug classified as potentially harmful during pregnancy and 3.4% purchased at least one drug classified as clearly harmful. On a study from Australia, folate (70%), iron (38%) and multivitamins (27%) were the most frequently taken drugs by pregnant women along with herbal drugs like ginger (20%), and raspberry leaf (9%) (5). In Netherlands, a study on drug prescription during pregnancy for chronic, occasional, and pregnancy related complaints showed that during the first trimester of pregnancy, 1.7% of drugs prescribed for chronic conditions and 2.3% of the drugs used occasionally were harmful (6).

Bangladesh is a country of 160 million where women are still neglected and it has tenth-highest burden of maternal mortality globally. World Health Organization recommended at least 4 antenatal check-up during pregnancy. However, studies revealed, only 18.27% of mothers achieve recommended visits (7). The percentage of women receiving at least one Anti-natal Care visit rose from 51% to 79% during the years 2011 and 2014 (8). Drug prescribing during pregnancy is common and essential for treating a pre-existing condition or a condition that develops during pregnancy (9). It is estimated that 33–69% of pregnant women are prescribed medications, including vitamins and minerals, during their pregnancy (10). A study from the USA found that the use of medication in pregnancy occurred in 88.8% of all pregnancies (11). In a recent multinational web-based study, researchers found that 81.2% of pregnant women used at least one medication (12). In Bangladesh nationwide study about the prescription pattern of the clinicians is lacking. A small sample sized study in this country revealed only 17.5% of prescriptions were completed in respect to patients' medical information, and on average 3.81 drugs were prescribed per prescription and antibiotics were prescribed in 72.5% of the prescriptions (13). We need valid information about

the prescription pattern to find out the quality of the health service for pregnant women. Furthermore, understanding the patterns of drug exposure in pregnant women during different stages of gestation will increase the awareness of physicians and upcoming mothers, which will help in employing appropriate measures to avoid the use of drugs that pose a risk to the fetus. This study aimed to fill this gap in knowledge and identify the domains that need further interventional measures to improve the rational drug prescription in the antenatal period. The knowledge of this study will also help in future policy development and take necessary steps to improve the health service.

II. METHODS

This was a cross sectional study conducted at Sir Salimullah Medical College (SSMC)- one of the best and oldest government medical college and another one is Dhaka National Medical College Hospitals (DNMCH)- another well reputed private medical college in Bangladesh. Pregnant women who are 18 years and above attending the Gynae and Obstetric outpatient department of the two institutions were interviewed from August 2017 to November 2017. However, women who were hospitalized during the current pregnancy or having severe neurocognitive disorder that impaired their communication were excluded from the study. After collecting the data, it was checked and rechecked for omission, inconsistencies and improbabilities. After cleaning the data it was edited, coded and entered into the computer. Data analysis was performed by statistical package for social science (SPSS), version-20. Descriptive statistics were calculated on the characteristics of the sample and are presented as frequencies and percentages for categorical data and as mean and standard deviation (SD) for continuous variables.

III. RESULT

We observed a wider age range of pregnant women 18-46 year with mean of 24.47 (±4.4) Sir Salimullah Medical College and Mitford Hospital (SSMCH) than the Dhaka National Medical College Hospital (DNMCH) 18-34 year with mean of 24.84 (±4.8) years. Only 16% women visited the SSMCH during their first trimester and most of the women came to hospital at the third trimester. Due to the lack of concern and lower socioeconomic status they visited at the later part of their pregnancy. In Bangladesh, people with higher education and better employment preferred private hospitals to attain medical service in pregnancy issue. The average number of drugs used in SSMCH was 6.2 and in DNMCH it was 5.7. One of the reasons behind the higher number of drug prescribed in this public institution was use of supplement nutritional (iron, folic acid zinc, vitamins) due to their poor nutritional status. In addition to that, we considered each of the components of the fixed dose drugs separately. In an earlier study, Rahman, Haq & Rahman (2013) (13) found on average 3.8 drugs were prescribed that was higher than the recommended limit by 2.0 as suggested by WHO. However, the findings were similar to the ones reported in India, Cambodia, Nepal, Pakistan, Sri Lanka, and Nigeria (13). The commonly prescribed anti-ulcerant were Esmoprazole (46%), Pantoprazole (26%) Rabeprazoe (1.5%), and Antacids (4%) in SSMCH and in DNMCH commonly prescribed Anti-ulcerant were Esmoprazole (59%), Pantoprazole (19%) Rabeprazoe (4%) and Antacids (17%). The majority of the drugs were prescribed from category A, 55% in SSMCH and 49% in DNMCH and no prescription was found that contain category X drug in either hospital.

Revealed a significant difference in the sociodemographic characteristic of the two institutions. However, the pattern of the prescription in these two hospitals was not significantly different in most of the domains.

Average number of drugs per encounter is an important index for educational intervention in prescribing practices (International Network for Rational Use of Drugs and WHO 1993).As per WHO, the average number of drug per prescription should be 1.6 to 1.8 (14). But in our study, it is evident that there is a tendency towards polypharmacy in Gynae and Obstetrics department in two hospitals for symptomatic treatment for severe and troublesome symptoms reported by the patient. It is preferable to keep the average number of drugs per prescription as low as possible since higher figures always lead to increased risk of drug interactions, adverse drug reactions, poor medication compliance and eventually increased cost of prescriptions.

About 9% drugs among the Group A were prescribed in generic name whereas in group B it was (0%). Dhaka National Medical College being a private hospital has no supply of government medication and patients need to purchase them from the market. That's why 100% of the drug prescribed is from trade name. However, WHO recommended the use of generic names is regarded as an important factor for promoting rational use of drug. The use of generic name contributes to cost reduction and provides more alternatives for drug purchases (15).

CONCLUSION

A few limitations of this study demand consideration. Firstly, given the cross-sectional nature of this study, researcher was unable to follow up the consistency of the prescribing pattern. Secondly, the sample was recruited from one public and one private tertiary

hospital in Dhaka city and this may raise concern over its representation of overall population. Few variables such as socioeconomic status have sociocultural influence and are vulnerable to information bias. Pregnant mothers attending the emergency department or indoor patients were not included in the study. Moreover, the small sample size and short allocated duration of the data collection time need to be in consideration for the result of the study. We need to develop a real time pharmacoepidemiological surveillance system to monitor the prescribing pattern of the country. Another important future policy and system development area that emerged is the promotion of the use of drugs in generic name for the empowerment of the consumer. The time has come to consider personalized medicine prescribing in this country.

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