

A Prospective Observational Study on Understanding and Awareness in Pregnant women with Comorbid conditions in a Tertiary Care Teaching Hospital

Swetha Bejugam, Prashanth Boya, Thutupalli Seetha Maha Lakshmi, and Dr. Bheema Sai Suyagna*

*Assistant Professor, Department of Pharmacy Practice, Malla Reddy College of Pharmacy, Maisammaguda, Secunderabad, Telangana

Research Article

ABSTRACT

Received date: 27/07/2020

Accepted date: 28/08/2020

Published date: 28/09/2020

*For Correspondence

Bheema Sai Suyagna, Assistant Professor,
Department of Pharmacy Practice,
Malla Reddy College of Pharmacy,
Maisammaguda, Secunderabad,
Telangana.

Tel: 91-83267013269

E-mail: bejswetha@gmail.com

Keywords: *Drugs, Pharmacology, Medical Trails, Thyroid dysfunction, Hypertension and Diabetes*

Background Information: Drugs play an important role in improving human health and promoting well-being. However, to produce the desired effect, they have to be safe, efficacious and have to be used rationally. In general, drugs unless absolutely necessary should not be used during pregnancy because drugs taken by a pregnant woman can reach the foetus and harm it by crossing the placenta, the same route taken by oxygen and nutrients, which are needed for the growth and development of foetus.

Methodology: A Prospective Observational study was conducted in the department of Obstetrics and Gynaecology in Malla Reddy College of Pharmacy from November 2019 to April 2020. Approximately 350 patients are to be considered from the department of OBG who were pregnant and diagnosed with medical complications (Thyroid dysfunction, Hypertension and Diabetes). The data collected in the case collection form was then analysed using Ms-Excel and statistical interpretation was done to decipher the objective analysis.

Results: The findings suggest that a total of 20% of people are literates but 80% of them are illiterates. Also, among the patients, 25% of them attended 3 antenatal visits or less, 66% attended 3 to 5 times to the antenatal ward for regular check-up and 14 % of them attended more than 5 times. Lastly, illiterate women are found to be more compliant and adherent to the medications (91%) whereas the literate women have low scores on adherence and compliance (55%).

Conclusion: Observations from the present study and the interpreted results through the discussion concludes that there is more need and emphasis on education of women during pregnancy. Education about drug utilisation, self-medication practices and appropriate usage of drugs during pregnancy is necessary for overall wellbeing of maternal health and the foetus. The need for education and counselling is even more among the illiterate women and those who belong to lower socio-economic class.

INTRODUCTION

Drugs play an important role in improving human health and promoting well-being. However, to produce the desired effect, they have to be safe, efficacious and have to be used rationally. In general, drugs unless absolutely necessary should not be used during pregnancy because drugs taken by a pregnant woman can reach the foetus and harm it by crossing the placenta, the same route taken by oxygen and nutrients, which are needed for the growth and development of foetus. While avoiding medications when pregnant may be desirable, it is often not possible and may be dangerous because some women enter pregnancy with medical conditions that require ongoing and episodic treatment (e.g. asthma, epilepsy, hypertension). Also, during pregnancy new medical problems can develop and old ones can be exacerbated (e.g. migraine headache) requiring pharmacological therapy. Failure to manage conditions like these may affect the health of both the mother and her infant [1]. More than 90% of pregnant women take prescription or non-prescription (over the counter) drugs or use social drugs such as tobacco or alcohol or illicit drugs at some time during pregnancy [2]. The fact that certain drugs given during pregnancy may prove harmful to the unborn child is one of the classical problems in medical treatment [3]. Pregnant women are usually excluded from medical trials

and results from animal studies need not apply to human population. Hence treating pregnant women with some drugs is a problem and most clinicians have a rather restricted approach to the use of drugs during pregnancy. Fear of causing foetal harm and death through medication use in pregnancy has resulted in many challenges to clinical research about the safety of drugs in pregnancy. Therefore, medication safety information in pregnancy is actually obtained through case reports, epidemiological studies and animal studies; all of which have limitations, that make determining risks of a drug use during pregnancy difficult [4].

Despite the paucity of information on the safety of drugs in pregnancy, the statistics on over the counter (OTC) and prescription drugs used in pregnancy indicate that drug use in pregnancy is widespread [5]. About 2-3% of all birth defects result from use of drugs. However, drugs are sometimes essential for the health of pregnant women and foetus. A health care practitioner may recommend that women take certain vitamins and minerals during pregnancy [6]. Drugs are also used for treatment of some common symptoms associated with pregnancy such as aches and pains, nausea and vomiting, and oedema [7]. Medications may also be prescribed to treat conditions occurring during but unrelated to pregnancy such as upper respiratory infections, urinary tract infections and gastrointestinal upsets to name some. Also pregnant woman may be using medications to treat pre-existing chronic conditions such as epilepsy, hypertension or psychiatric disorders or to treat pregnancy related disorders such as pregnancy induced hypertension, to induce labour or to facilitate lung maturity in the foetus expected to be delivered preterm [8]. Also, this patient population may be exposed to any other agents that may have an adverse effect on foetus [9]. It therefore becomes important to examine the pattern of drug use in pregnancy to see to what extent there may be room for improvement in the light of current knowledge [10].

Aim

The aim of the study is to evaluate the awareness and understanding in the pregnant women with comorbid conditions with relative to their age, literacy level, working pattern and belief system. Details like awareness regarding antenatal checks, education status, self-medication practices, understanding relating to drug use are studied in detail.

Methods

A Prospective Observational study was conducted in the department of Obstetrics and Gynaecology in Malla Reddy College of Pharmacy from November 2019 to April 2020. Approximately 350 patients are to be considered from the department of OBG who were pregnant and diagnosed with medical complications (Thyroid dysfunction, Hypertension and Diabetes). The inclusion criteria were set as pregnant women who are presented to the outpatient department of Obstetrics and Gynaecology ward, the inpatients who are admitted in to the OBG ward after referral from outpatient department, pregnant ladies who have been diagnosed with hypothyroidism, hyperthyroidism, hypertension and Gestational diabetes and age above 20 years and below 40 years. Based on the inclusion and exclusion criteria subjects were chosen. Data was collected and analysed for demographics, various cardiovascular disease and various drugs prescribed. The collected data was incorporated in Predesigned patient proforma and information regarding, social history, comorbidities, adverse effects and relevant data was collected and then analysed using Ms-Excel and statistical interpretation was done to decipher the objective analysis.

Institutional Human Ethics Committee [IHEC] approval was obtained for initiating and conducting the study. The IHEC approval code of the study is IEC/MRIMS/07/2019. The protocol of the study which includes the aim, objectives, methodology and plan of work was submitted to the Ethics Committee of the hospital. The authorization was obtained, and permission was given to utilize the hospital facilities to conduct the study and the follow up of the patients in the selected department.

RESULTS AND DISCUSSION

Overall results

The Age wise distribution of patients (n=350) shows majority of the patients belonged to the age group of 18-20 years (n=158) and the least number of the patients belonged to the over 35 years age group (n=15) as shown in Table 1.

Age Group	Number of Patients
18-20	158
21-25	81
26-30	73
31-35	22
>35	15

Table 1. Age wise distribution of selected patients.

Parameters	Illiterate (78%)	Literate (22%)	p-value
Self-medication practices	89%	7.80%	<0.001
use of herbal and ayurvedic drugs	28%	1.38%	<0.001
Antinatal visits			
<3	5.60%	45%	<0.001
3 to 5	33%	77%	<0.001
>5	65%	1.20%	<0.001
Compliance and adherence to medication advocated	91%	55%	<0.001

Table 2. Impact of education status on various parameters

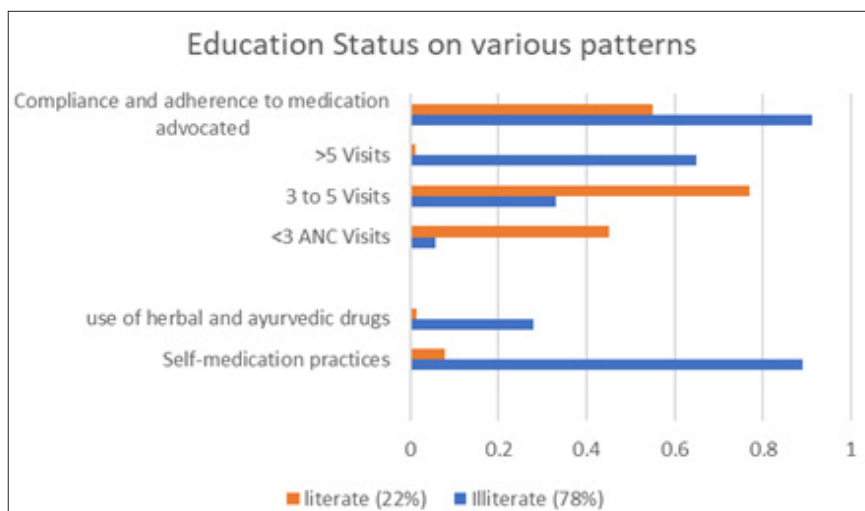


Figure 1: Impact of education status on various parameters

The statistical analysis shows that 89% of the illiterate women follow self-medication practices and 7.8% of literate women practice self-medication during pregnancy. The analysis also indicates that usage of herbal and ayurvedic medicines is more in illiterate women (28%) than literate women (1.38%). Further, the number of ANC visits is more in illiterate women than the literate women. Lastly, illiterate women are found to be more compliant and adherent to the medications (91%) whereas the literate women have low scores on adherence and compliance (55%).

Most of the women experienced tiredness and anxiety (44%) during first trimester, followed by anaemia (43%), hyper-emesis (33%), Urinary tract infections and H.Pylori infections (21%), heartburn and indigestion (19%). Only a less percentage of women experienced dyspepsia (1.5%), body pains (3%), constipation and haemorrhoids (4%) and fever (7%) as indicated in table 3.

Infections	13%
Common cold	18%
Body pains	3%
Fever	7%
Dyspepsia	1.50%
H.pylori infection	21%
Hyper-emesis	33%
Urinary tract infections and Vaginal thrush	21%

Heartburn and indigestion	19%
Constipation and Hemorrhoids	4%
Tiredness and anxiety	44%
Anemia	33%

Table 3: Medical conditions associated with pregnancy

The figure 2 shows that 50% of women do not have habit of self-medication. In the rest, approximately 11% follow Ayurveda, 30% trust home remedies and 9% use over the counter medicines without prior consultation.

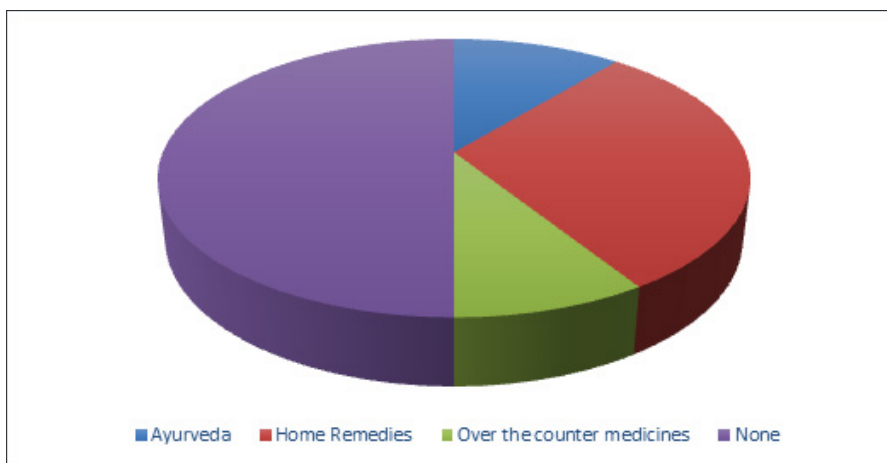


Figure 2: The characteristics of self-medication practices in antenatal women

When discussing about the use of over the counter medicines, it was identified that approximately 78% of women did not have any idea of how harmful the OTC medications were. 6% of them expressed that they knew the OTC medication usage was harmful to mother, 2% knew that usage of medicines without consultation was harmful to the foetus and 14% indicated that they knew that both foetus and mother are affected by OTC medicines as represented in table 4.

Parameter	Percentage
Harmful to mother	6%
Harmful to foetus	2%
Harmful to both	14%
No idea	78%

Table 4: General Understanding of study population about drug use

The pie chart in figure 3 indicates the awareness of the women about the antenatal examination during pregnancy. While 41% of them indicated that they are aware of the importance of antenatal examination during pregnancy for safe institutional delivery, 59% were not aware of the importance of ante-natal examination. Appropriate patient counselling and awareness programs are necessary for these women, especially in the illiterates.

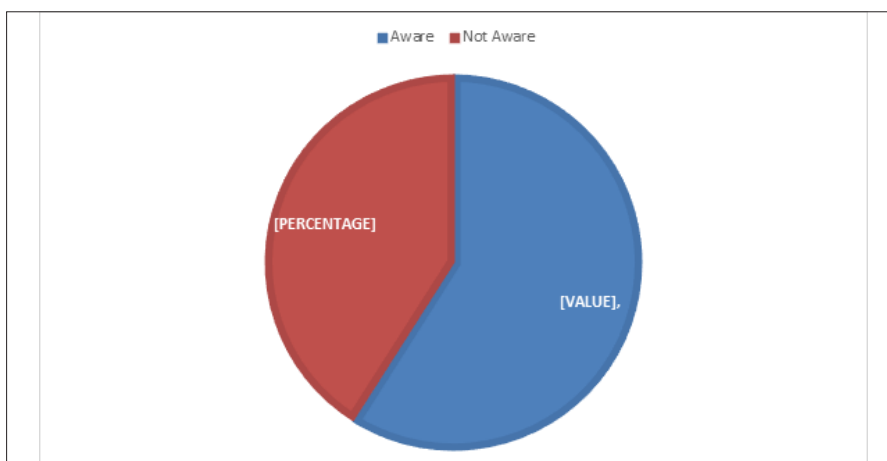


Figure 3: Awareness of antenatal examination among antenatal women

There are many studies that confer that there is less knowledge and awareness in pregnant women regarding the safety of drugs used in pregnancy [6]. In spite of this, there are many studies that suggest that pregnant women take different drugs without prior consultation, not knowing the adverse effects to both, the mother and the baby. In this context, constant monitoring of the prescriptions by the clinical pharmacists is necessary to reduce contraindications and adverse events/effects in the women [4,7,9]. There are many studies being conducted across the world for this reason and this present study was conducted in a tertiary care teaching hospital for analysing the demographic details of the pregnant women, the incidence of the reported comorbid conditions, their compliance to medication, their adherence to the treatment, their awareness towards Over the counter medication and other safety protocols during pregnancy [2,6,11]. In order to analyse the prescription of the study population, WHO core drug prescribing indicators is used along with the risk of drugs on pregnancy by categorising them as per FDA guidelines [5].

It was also observed that majority of the pregnant women with comorbid conditions were educated about regular check and change of medicines according to the diagnostic parameters as per the hospital policy. However, our study identified that the attendance to the routine check-up was based on their literacy and awareness [11]. The study identified that mostly illiterate women made sure to have more than 5 ANC visits (65%) when compared to their literate counterparts (1.20%). The gap was identified as gaining knowledge over medication through self-medication practices and excessive usage of online sources for their wellbeing during pregnancy. It was therefore identified that awareness programs are necessary to all the pregnant women at every visit, irrespective of their education status [14].

Next, usage of homeopathic medicines and other ayurvedic supplements was reported to be 28% which is considerably high. Sufficient patient education was given through the project course to educate the usage of other supplements and their risks during pregnancy [6,9,5]. Alongside, guidance on diet and equipping essential vitamins and nutrients through diet is also provided to ensure they are safe and unnecessary usage of medications is avoided. In this context, it was also identified that usage of these unprescribed other form of medicines are more observed in illiterates than the literates, thereby necessitating role of educating and empowering pregnant women in the course of pregnancy [16,17].

Another parameter to be discussed in the study is the usage of OTC drugs and self-medication. From the observations, it can be inferred that these practices are more commonly reported in illiterates (89%) than literates (7.80%). The main reason attributed to this is to save the consultation fee and the belief that it doesn't need doctors' advice. In some studies, it was identified that OTC drugs are contraindicated all over the World, but the incidence of self-medication and OTC drugs are still higher and often unreported [14,15].

CONCLUSION

Often drugs play a very important role in improvement of human health and in promotion of overall wellbeing. The main parameters for the drugs to show effect are safety profile, efficacy and rational usage. In pregnancy, rational usage of drugs is not limited to safeguarding of maternal health but also in healthy development of foetus. Treating the comorbid conditions like gestational diabetes, gestational hypertension and thyroid disorders necessarily, using the appropriate treatment guidelines ensures maternal health and avoids preterm deliveries or abortions. Observations from the present study and the interpreted results through the discussion concludes that there is more need and emphasis on education of women during pregnancy. Education about drug utilisation, self-medication practices and appropriate usage of drugs during pregnancy is necessary for overall wellbeing of maternal health and the foetus. The need for education and counselling is even more among the illiterate women and those who belong to lower socio-economic class. Counselling by the clinical pharmacists can be advocated in many areas ranging from appropriate usage of drugs, necessity of consultation before use of drugs, medication adherence and compliance, importance of diet and supplements, avoidance of self-medication practices and OTC drugs. Another aspect of education is to emphasise on importance of regular antenatal checks and regular diagnostic tests in comorbid conditions. Pregnant women should be encouraged to take drugs at appropriate time and get diagnosis of their comorbidities at regular intervals, which helps the medical staff in dosage adjustments. Counselling and education of women of childbearing age is also important in this context in order to empower them. Further rational usage of drugs is to be advocated at all the health care settings and necessary training and education programs must be in reach through inclusion of community pharmacological studies.

REFERENCES

1. Devkota R, Khan GM, Alam K, Regmi A, Sapkota B. Medication utilization pattern for management of pregnancy complications: a study in Western Nepal. *BMC pregnancy and childbirth*. 2016 Dec;16(1):272.
2. Varghese, B.M., Vanaja, K. and Banu, R., 2016. Assessment of drug usage pattern during pregnancy at a tertiary care teaching Hospital. *International Journal of Medicine and Public Health*, 6(3).
3. Joshi.h, Patel K, Patel.V. Drug use pattern during pregnancy: A prospective study at tertiary care teaching hospital. *NHL Journal of Medical Sciences*. 2012 Jul; 1(1): 14-7.
4. Inamdar, I.F., Aswar, M., Sonkar, V. and Doibale, M., 2012. Drug utilization pattern during pregnancy. *Indian medical gazette*, 146, pp.305-11.
5. Sajith M, Nimbargi V, Modi A, Sumariya R, Pawar A. Incidence of pregnancy induced hypertension and prescription pattern of antihypertensive drugs in pregnancy. *Int J Pharma Sci Res*. 2014;23:4.

6. Alexander EK, Pearce EN, Brent GA, Brown RS, Chen H, Dosiou C, Grobman WA, Laurberg P, Lazarus JH, Mandel SJ, Peeters RP. 2017 Guidelines of the American Thyroid Association for the diagnosis and management of thyroid disease during pregnancy and the postpartum. *Thyroid*. 2017 Mar 1;27(3):315-89.
7. Sharma, R., Kapoor, B. and Verma, U., 2006. Drug utilization pattern during pregnancy in North India. *Indian journal of medical sciences*, 60(7), pp.277-287.
8. Sasidharan P, Kolasani BP, Divyashanthi CM. An observational prospective study on prescribing pattern of drugs among pregnant women admitted in antenatal ward of a tertiary care teaching hospital in coastal town of South India. *National Journal of Physiology, Pharmacy and Pharmacology*. 2017;7(1):25.
9. Fikadu, M., Kebebe, D., Amelo, W. and Gashe, F., 2015. Drug utilization pattern and potential teratogenicity risk among pregnant women visiting antenatal clinic: the case of a primary hospital. *Indian J Pharm Pract*, 8(1), p.27.
10. Dathe K, Schaefer C. The use of medication in pregnancy. *Deutsches Ärzteblatt International*. 2019 Nov;116(46):783.
11. Black E, Khor KE, Kennedy D, Chutatape A, Sharma S, Vancaillie T, Demirkol A. Medication use and pain management in pregnancy: a critical review. *Pain Practice*. 2019 Nov;19(8):875-99.
12. van Gelder MM, Rog A, Bredie SJ, Kievit W, Nordeng H, van de Belt TH. Social media monitoring on the perceived safety of medication use during pregnancy: A case study from the Netherlands. *British journal of clinical pharmacology*. 2019 Nov;85(11):2580-90.
13. Stevens AW, Goossens PJ, Knoppert-van der Klein EA, Draisma S, Honig A, Kupka RW. Risk of recurrence of mood disorders during pregnancy and the impact of medication: A systematic review. *Journal of affective disorders*. 2019 Apr 15;249:96-103.
14. van Gelder MM, de Jong LA, te Winkel B, Olyslager EJ, Vorstenbosch S, van Puijenbroek EP, Verbeek AL, Roeleveld N. Assessment of medication use during pregnancy by Web-based questionnaires, pharmacy records and serum screening. *Reproductive Toxicology*. 2019 Mar 1;84:93-7.
15. Zusman EZ, Sayre EC, Aviña-Zubieta JA, De Vera MA. Patterns of medication use before, during and after pregnancy in women with systemic lupus erythematosus: a population-based cohort study. *Lupus*. 2019 Sep;28(10):1205-13.
16. Magee LA, Khalil A, Kametas N, VON DADELSZEN P. TOWARDS PERSONALIZED MANAGEMENT OF CHRONIC HYPERTENSION IN PREGNANCY. *American Journal of Obstetrics and Gynecology*. 2020 Jul 18.
17. Andersen JT, Futtrup TB. Drugs in pregnancy. *Adverse Drug Reaction Bulletin*. 2020 Apr 1;321(1):1243-6.