Asian Journal of Pharmaceutical Technology & Innovation
ISSN: 2347-8810

Research Article

Prescription Pattern of Drugs In Pregnancy Induced Hypertension In A Tertiary Care Hospital

N. Divyashree*, V. J. Divya, Tapendra Bhattarai, Joga Sasidhar

Received on: 10-12-2016
Accepted on: 25-12-2016
Published on: 15-02-2017

Corresponding Author:
***Dr. N. Divyashree,**
Assistant Professor,
Department of Pharmacy Practice,
Bharathi College of Pharmacy,
Bharathinagar, K M Doddi, Maddur,
Mandya, Karnataka 571422, India

ABSTRACT

Background: The aim of the present study was to investigate the drug utilization pattern of antihypertensive drugs in pregnancy induced hypertension.
Methods: A retrospective observational study was conducted by department of Pharmacy practice in collaboration with the Department of Obstetrics in a tertiary care hospital at Karnataka after taking permission from the Institutional Review Board. WHO basic indicators were indicators were used for studying the prescribing pattern of drugs. The study involves collection and documentation of case sheets and treatment charts of inpatients with a diagnosis of pregnancy induced hypertension along with other co morbidities.
Results: Out of the total prescriptions studied the most commonly prescribed antihypertensive was nifedipine , followed by labetalol and methyldopa . Majority drugs prescribed were from category C and B. Single drug therapy was prescribed in 77.01% patients. The use of fixed dose combinations was low.
Conclusion: The incidence of single drugs therapy and two drugs was high. Nifedipine was the commonly prescribed antihypertensive. None of the prescribed drugs were from teratogenic category D and X.

*Email Id-
divyanag.divyashree@gmail.com

Key-words: Antihypertensives, Drug use indicators, Pregnancy induced hypertension,Pregnancy category of drugs.

Cite this article as:
N. Divyashree , V. J. Divya , Tapendra Bhattarai, J.Sasidhar, Prescription Pattern of Drugs In Pregnancy Induced Hypertension In A Tertiary Care Hospital, Asian Journal of Pharmaceutical Technology & Innovation, 05 (22); 01-05, 2017.
www.asianpharmtech.com

INTRODUCTION

Hypertensive disorders are the most common medical complications of pregnancy with a reported incidence ranging from 6 to 10% [1]. The hypertensive disorders of pregnancy are a leading cause of maternal and perinatal mortality and morbidity in Canada1 and internationally.[2,3]The incidence varies among different hospitals, regions and countries. In addition, these disorders are a major cause of maternal and prenatal mortality world wide [4]. Hypertensive pregnant mothers have greater risks for premature delivery, intrauterine foetal death, growth retardation and abruption placentae, they also have an increased risk of vascular injury with thrombotic micro angiopaty and co-agulopathy, cerebral haemorrahage, and multi organ injury especially of kidney and liver. So as to avoid all such complications, it is better to start the treatment with antihypertensive after assessing correct stage and class of hypertension and always prescribe the safe drug to avoid adverse effects over the foetus and mother[5].

Normal pregnancy is characterized by a fall in blood pressure, detectable in the first trimester and usually reaching a nadir in the second trimester. Blood pressure rises towards pre-conception levels by term. Hypertension in pregnancy is defined as systolic blood pressure (sBP) ≥ 140 mmHg and/or diastolic blood pressure (dBP) ≥ 90 mmHg, or by ↑ in sBP ≥ 30 mmHg, or in dBP ≥15 mmHg from preconception or first trimester blood pressure confirmed by two measuring 6 hours apart[7].

Hypertensive disorders during pregnancy are classified into 4 categories, as recommended by the National High Blood Pressure Education Program Working Group on High Blood Pressure in Pregnancy: 1) chronic hypertension, 2) preeclampsia-eclampsia, 3) preeclampsia superimposed on chronic hypertension, and 4) gestational hypertension (transient hypertension of pregnancy or chronic hypertension identified in the latter half of pregnancy) [6].

Hypertension in pregnancy is of following major types

1. Chronic hypertension: Blood pressure (BP) ≥ 140/90 mmHg is diagnosed before pregnancy in first 20 weeks of gestation or persists 42 days after delivery.
2. Gestational hypertension: Blood pressure ≥ 140/90 mmHg established after 20 weeks of gestation and not associated with proteinuria.
3. Preeclampsia-eclampsia: Hypertension, proteinuria (≥ 0.3 g/24 hours) and edema after 20th week of gestation. Eclampsia is defined as appearance of generalized convulsions associated with signs of pre-eclampsia, or their occurrence within 7 days of parturition and not caused by epilepsy or other convulsive disorder[7].

A number of drugs in various combinations are generally used for effective long –term management of hypertension. The present study was designed to analyze the physicians prescribing pattern of various antihypertensives, a drug utilization study of both qualitative and quantitative variants, also describing physicians compliance with existing guidelines.

METHODS

A retrospective observational study was conducted by department of Pharmacy practice in collaboration with the Department of Obstetrics in a tertiary care hospital at Karnataka. WHO basic indicators were indicators were used for studying the prescribing pattern of drugs.The study involves collection and documentation of case sheets and treatment charts of inpatients with a diagnosis of pregnancy induced hypertension along with other comorbidities.

The data regarding demographic details, presenting complaints, gestational age, obstetrics history, diagnosis, blood pressure monitoring, current medications, antihypertensive drugs prescribed were gathered from medical record files. The utilization of antihypertensive drugs in pregnancy was evaluated.The prescribed drugs also reviewed for their category and safety.

Definition of risk factors

Category A

Controlled studies in women fail to demonstrate a risk to the foetus in any trimester and the possibility of foetal harm remains remote.

Category B

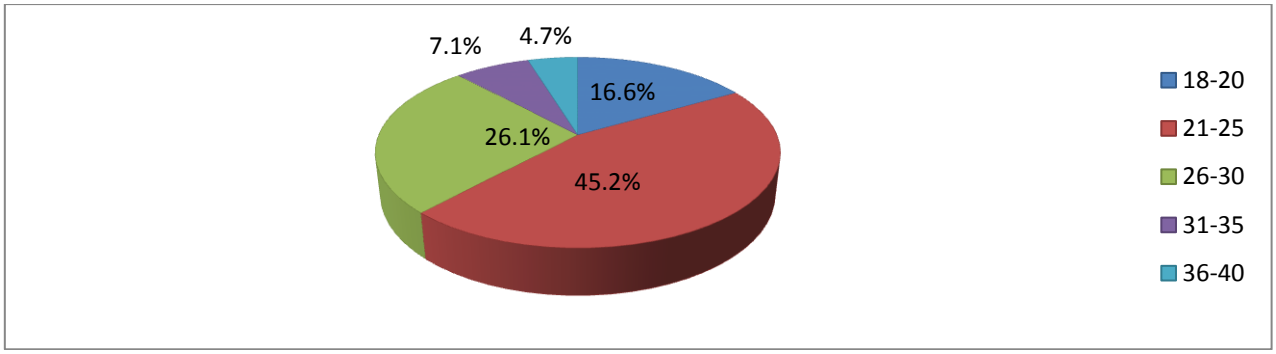
Either animal-reproduction studies have not demonstrated a foetal risk but there are no controlled studies in pregnant women or animal-reproduction studies have shown an adverse effect (other than a decrease in fertility) that was not confirmed in controlled studies in women in the 1st trimester(and there is no evidence of a risk in later trimesters).

Category C
Either studies in animals have revealed adverse effects on the foetus (teratogenic or embryocidal or other) and there are no controlled studies in women and animals are not available. Drugs should be given only if the potential benefits justify the potential risk to the foetus.
Category D
There is positive evidence of human foetal risk, but the benefits from use in pregnant women may be acceptable despite the risk (e.g. if the drug is needed in a life- threatening situation or for a serious disease for which safer drugs cannot be used or are ineffective)
Category X
Studies in animals or human beings have demonstrated foetal abnormalities or there is evidence of foetal risk based on human experience or both, and the risk of the use drug in pregnant women clearly outweighs any possible benefits. The drug is contraindicated in women who are, or may become pregnant[8].
Statistical Analysis: Statistical analysis was done by simple sampling method.Descriptive statistics were used to analyze data.

RESULTS:
A total of 84 treatment charts were collected and analysed. The mean maternal age was 23.8 years during the hospital admission. Highest incidence of hypertension was occurred in age group of 21-25 years (45.2%) and primigravidae patients (50.0%). A majority of patients (90.4%) were on mono-therapy whereas (9.6%) were on Combination therapy. Nifedipine was the commonest prescribed antihypertensive as monotherapy (59.5 %) as well as in combination therapy (i.e.methyldopa and Nifedipine). The next commonly used drug was labetalol followed by methyldopa.

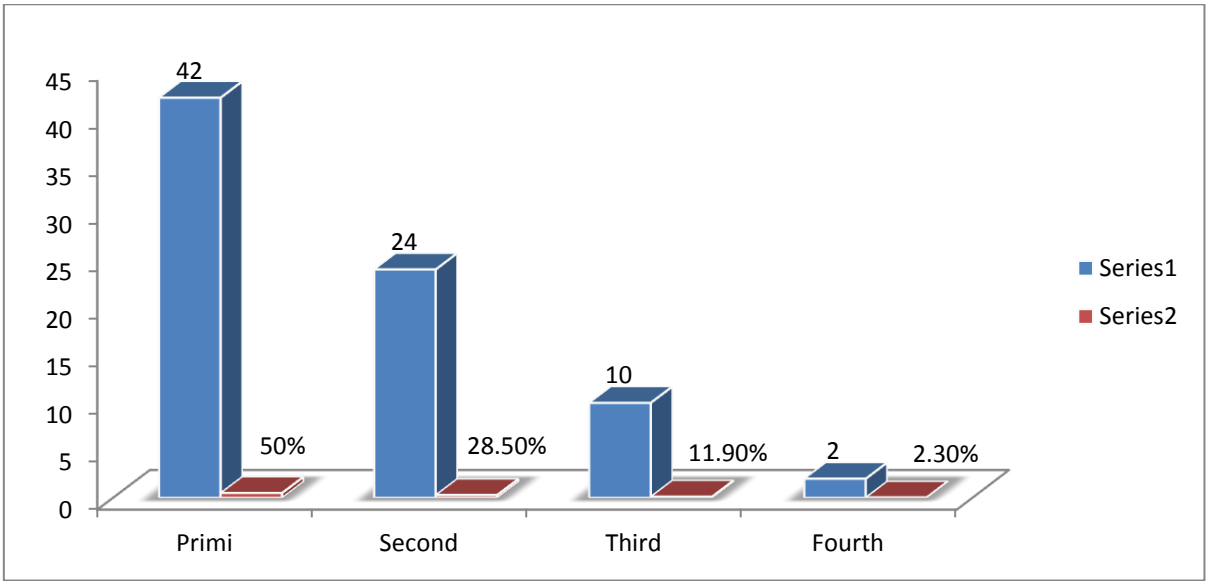
Demographic distribution of patients

AGE GROUPS	NO. OF PATIENTS	PERCENTAGE
18-20	14	16.6
21-25	38	45.2
26-30	22	26.1
31-35	06	7.1
36-40	04	4.7
	84	100

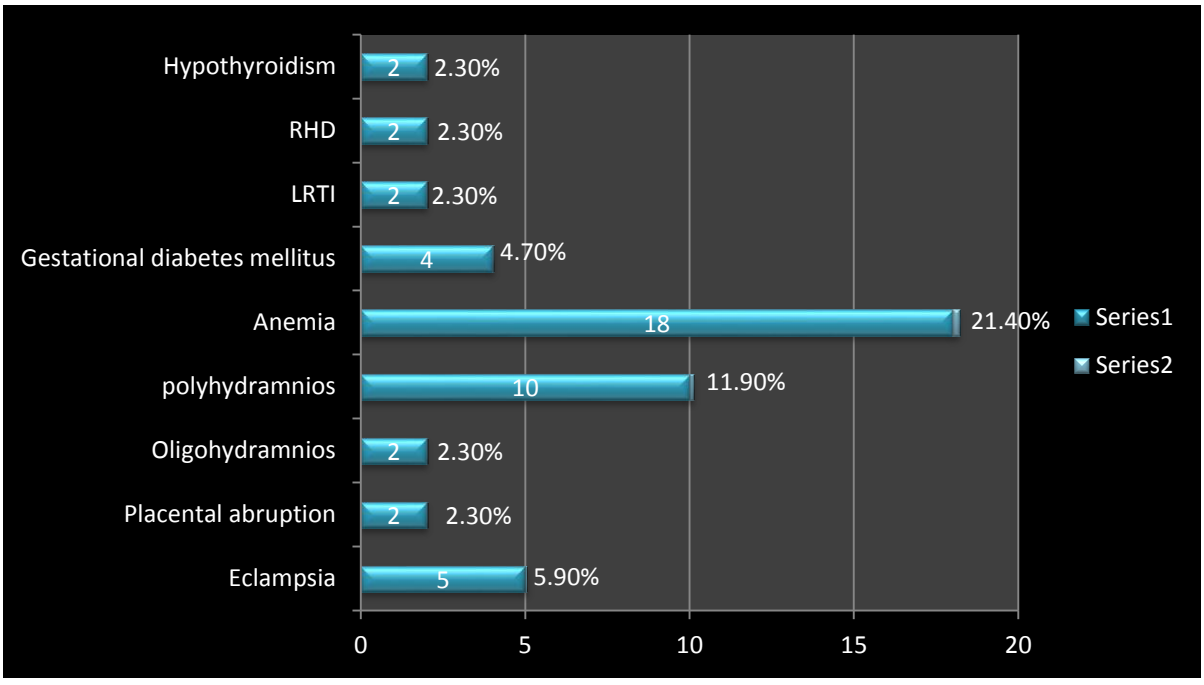


Gravidity wise distribution of patients

GRAVIDA	NO.OF PATIENTS	PERCENTAGE
Primi	42	50
Second	24	28.5
Third	10	11.9
Fourth	02	2.3



Maternal complication along with PIH	NO.OF PATIENTS	PERCENTAGE
Eclampsia	05	5.9
Placental abruption	02	2.3
Oligohydramnios	02	2.3
polyhydramnios	10	11.9
Anemia	18	21.4
Gestational diabetes mellitus	04	4.7
LRTI	02	2.3
RHD	02	2.3
Hypothyroidism	02	2.3



Prescribing pattern of antihypertensive drugs in inpatients with a diagnosis of PIH.

DRUG THERAPY	NO.OF PATIENTS	PERCENTAGE
Monotherapy	76	90.4
Combination Therapy	8	9.5

Antihypertensive drugs used.

Name of drug used	Frequency	Percentage	Category of drug.
Nifedipine	50	59.5	C
Labetalol	26	30.9	C
Methyldopa	8	9.5	B

Conclusion

Our study concluded that the incidence of hypertensive disorders in pregnancy was high for primigravida and in an age group of 21-25 years. Nifedipine was the commonest prescribed antihypertensive in monotherapy and combination.Nifedipine and labetalol belongs to category C and methyldopa belongs to Category B.

References

1. ACOG Technical bulletin. Hypertension in pregnancy No. 219 January 1996. Committee on Technical Bulletins of the American College of Obstetricians & Gynecologists. Int. J. Gynaecol obstet 1996:53:175-183.
2. Why mothers die 2000-2002. The sixth report of the Confidential Enquiries into Maternal Deaths in the United Kingdom. London: RCOG Press;2004.
3. Roberts JM, Pearson G, Cutler J, Lindheimer M. Summary of the NHLBI Working Group on Research on Hypertension During Pregnancy. Hypertension 2003;41:437-45.
4. National High Blood Pressure Education Programme working group: Report on high blood pressure in pregnancy. Am J. obstet Gynecol 163:1689,1990.
5. Tanuja v. Hooli, santoshkumar j, manjunath.s, vinodkumar c.s. drug utilization study of antihypertensives in obstetric practice in a tertiary care hospital. Issn. Vol i: iss (3): nov-dec(2010):0976-4550.
6. Ching-Ming Liu, Po-jen Cheng, Sheuenn-Dyh Chang. Maternal Complications and Perinatal Outcomes associated with Gestational Hypertension and Severe Preeclamsia in Taiwanese Women. Journal Formes Medical Association 2008; 107(2):129-138.
7. Folic M, Folic N, Varjacic M, Jakovljevic M, Jankovic S. Antihypertensive drug therapy for hypertensive disorders in pregnancy. Acta Medica Medianae.2008;47(3):67-71.
8. Drug facts & Comparison 2005, FDA Pregnancy categories A-4.