



PREVALENCE OF HYPERTENSION IN PREGNANCY AND ITS ASSOCIATED FACTORS AMONG ANTENATAL MOTHERS AT SELECTED HOSPITALS: A CROSS SECTIONAL STUDY

Ms. Priya Diwate

Mrs Hemlata Salve

ABSTRACT

Introduction: Hypertension is the most common medical problem encountered during pregnancy, complicating up to 10% of pregnancies. 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. Chronic hypertension Preeclampsia-eclampsia, Preeclampsia superimposed on chronic hypertension, Gestational hypertension (transient hypertension of pregnancy or chronic hypertension identified in the latter half of pregnancy). **Methodology** the study of evaluate prevalence of hypertension in pregnancy and its associated factors among antenatal mothers using Cross sectional study. Conducted at selected hospitals, 100 Antenatal mothers the study employed a quantitative approach. Participants included all antenatal mothers between age group of 18 to 49 years. Non probability convenience sampling technique was used. Data collection involved a semi-structured questionnaire for demographics and clinical parameter and self-structure checklist for assess associated factors of hypertension in pregnancy. Reliability of the tools was confirmed with the Karl Pearson correlation coefficient for the questionnaire (0.978) and Test Retest form method of reliability, it is found to be 0.9888 both exceeding the acceptable threshold of 0.8. **Result** The study assessed prevalence of hypertension in pregnancy and its associated factors among antenatal mothers at selected hospitals. The prevalence of hypertension in pregnancy was 36 %. The occurrence rise with age with age peak were 35 year. Majority in risk factor was 91.7% of the mothers had stress, 36.1% of the mother had family history, 38.9% of the antenatal mothers had blood disorder, 55.6% of the mothers had diet contain high in fatty foods. 72.2% of the mothers had diet contain high in salty food. 41.67% of antenatal mothers had mild risk, 58.33% of them had moderate risk of hypertension in pregnancy. Minimum score was 6 and maximum score was 14. Mean score was 7.88 ± 1.54 and mean percentage score was 21.91 ± 4.29 . **Conclusion** The prevalence of hypertension in pregnancy was high that other similar studies. Risk factors profiling of antenatal mother is of utmost importance to identify those who may be likely to develop hypertension in pregnancy.

KEYWORDS : Hypertension, Pregnancy, Prevalence, Risk Factors.

INTRODUCTION

Hypertension is the most common medical problem encountered during pregnancy, complicating up to 10% of pregnancies. 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. Chronic hypertension Preeclampsia-eclampsia, Preeclampsia superimposed on chronic hypertension, Gestational hypertension (transient hypertension of pregnancy or chronic hypertension identified in the latter half of pregnancy). This terminology is preferred over the older but widely used term "pregnancy-induced hypertension" (PIH) because it is more precise.

The Society of Obstetricians and Gynecologists of Canada (SOGC) released revised guidelines that simplified the classification of hypertension in pregnancy into four categories, pre-existing hypertension, gestational hypertension, preeclampsia, or "other hypertensive effects" on the basis of different diagnostic considerations.

A systolic blood pressure greater than 140 mmHg or a diastolic blood pressure greater than 90 mmHg that develops at 20 weeks or more gestational age, with or without proteinuria, is considered to be hypertension in pregnancy. Elevated systolic and diastolic blood pressure is key indicators of pregnancy-related hypertension. Pregnancy-related hypertension is a serious public health risk both in industrialized and developing nations, where it contributes to high rates of maternal and neonatal morbidity and mortality.

Background Of Study

According to a World Health Organization (WHO) research from 2014, hypertension is the second most common direct cause of maternal death globally. Preeclampsia (PE) and other hypertension illnesses cause over 76,000 pregnant women to pass away each year, or roughly 200 every day. Women in industrialized nations face an average lifetime risk of 1 in 4000 to 1 in 10000 pregnancy-related mortality,

compared to 1 in 15 to 1 in 50 for women in under developed nations. The leading cause of maternal death during pregnancy, second only to hemorrhage, is hypertension.

Need Of The Study

Eclampsia-related maternal morbidity in India ranges from 15% to 23%, while Eclampsia-related maternal morbidity ranges from 16% to 21% and death ranges from 12% to 15%. Pre-Eclampsia-related maternal death in South India is 7%, with cases typically occurring in poor socio-economic groups, while Eclampsia-related maternal mortality is 5%.

Around 3,000,000 pregnant women die each year from pregnancy-related cause's worldwide, with postpartum hemorrhage, puerperal sepsis, hypertension, unsafe abortions, and obstructed labor accounting for 60% to 80% of all maternal deaths.

Studying the prevalence and Risk Factors of Hypertensive Disorders in Pregnancy, Case of Mezam Division, NWR Cameroon. Consecutive sampling was used to recruit 1210 pregnant women. 14.5% of pregnancies had hypertension; this included 3.4% chronic hypertension (CH), 31.8% gestational hypertension (GH), 48.3% preeclampsia, 5.7% preeclampsia with concurrent chronic hypertension (PE), and 10.8% severe PE. Hypertension affects 14.5% of pregnant women, which is a considerable percentage. The most common were pre-eclampsia and gestational hypertension, followed by severe pre-eclampsia (PE). In order to assess pregnant women at increased risk of hypertension, a variety of independent risk variables were found.

Problem Statement:- Prevalence of hypertension in pregnancy and its associated factors among antenatal mothers at selected hospitals: A Cross sectional study

Primary Objective:

To assess prevalence of hypertension in pregnancy and its associated factors among antenatal mothers.

Secondary Objective

1. To assess the prevalence of hypertension in pregnancy among antenatal mothers.
2. To find out the associated factors related to hypertension in pregnancy among antenatal mothers.
3. To find out the association between hypertension in pregnancy among antenatal mothers with selected demographic variable.

Conceptual Framework

Healthcare Utilization Model (HUM) by Andersen and Newman (2005)

Methodology

Research Approach – quantitative research approach

Research Design – A Cross sectional study

Sample – antenatal mothers

Sample Size – 100 antenatal mothers

Sample Technique – non probability convenient sampling technique.

Tool Section

Section I -Semi structured questionnaire on demographic variable.

Section II- Semi structured questionnaire on clinical parameter.

Section III-Checklist on associated factors of hypertension in pregnancy.

RESULT**Section I: - Distribution Of Antenatal Mothers With Regards To Demographic Variables And Clinical Parameters.**

In the study, in demographic variable participate 100 antenatal mothers (100%) Majority 24% were in the age group of 27-30 years and more than equal 35 years, 23% were in the age group of 23-26 years, 21% were the age group of 31-34 years, 8% of the antenatal mothers were in the age group of 19-22 years. Majority of antenatal mothers 74% were Hindus, 14% of them were Buddhist, 8% of them were Muslim and 4% of antenatal mothers were Christian. Majority 52% up to higher secondary, 28% up to graduation, 13% of them were secondary, 6% of them were primary and 1% of antenatal mother were educated up to PG. Majority 32% of the antenatal mothers were homemaker, 22% of the antenatal mothers doing private service, 21% of them were self-employed, 18% of them doing government service and 7% of them were labor. Majority 68% of them were from nuclear family, 27% of the antenatal mothers were from joint family and 5% of them were from extended family. Majority 78% of them were from urban area, 12% of the antenatal mothers were from semi urban area and 10% of them were from rural area. Majority 61% of them had monthly income of more than 20,000 Rs, 25% of them were having monthly income of 15,001-20,000 Rs, 9% of them had monthly income of 10,001-15,001 Rs and 5% of the antenatal mothers were having monthly family income of below 10,000. Majority 53% of them were non vegetarian, 27% of antenatal mothers were vegetarian, and 20% of antenatal mothers were eggitarian.

In the study, in clinical parameter variable participate 100 antenatal mothers (100%), Majority 95% of antenatal mothers had height of 145-155 cm and 5% of them had height of 156-165 cm. Majority 65% of antenatal mothers had weight of 56-65 kg, 18% had 45-55 kg and 17% of them had weight of 66-75 kg. Majority 82% of antenatal mothers had BMI of more than 25 kg/m². and 18% of them had 18.5-24.4kg/m². Majority 36% of antenatal mothers were gravida one, 31% of them were gravida three, 23% of them were gravida two and 10% of more than gravid 2. Majority each 32% of antenatal mothers had gestation age of had between 24-31 and 32-39 16-23, 21% of them had more than 40 wks and 15% of them had 16-23 wks,

Majority 38% of antenatal mothers were nulliparous, 35% were multipara and 27% of them were primipara. Majority 62% of antenatal mothers had blood pressure of ≤120/80 mmHg and 38% of them had blood pressure of >120/80 mmHg. Majority 64% of antenatal mothers were not diagnosed with hypertension in pregnancy and 36% of antenatal mothers were diagnosed with hypertension in pregnancy. Majority 72.22% of antenatal mothers were diagnosed with hypertension in pregnancy between more than 20 weeks and 27.78% of them were diagnosed with hypertension in pregnancy in less than 20 weeks.

Section II:-assessment Of Prevalence Of Hypertension In Pregnancy Among Antenatal Mothers At Selected Hospital.

Table IV-3: Prevalence Of Hypertension In Pregnancy N=100

Hypertension in pregnancy	Frequency (f)	Percentage (%)
Present	36	36
Absent	64	64
Total	100	100

Hypertension was present 36(36%) of antenatal mothers. Prevalence of hypertension was 36%.

Section III: - Assess The Associated Factors Related To Hypertension In Pregnancy Among Antenatal Mothers At Selected Hospital.

Table: Factors Related To Hypertension In Pregnancy Among The Antenatal Mothers At Selected Hospitals N=36

Sr. No	Associated Factors	Yes	%	No	%	Mean	SD
1	Family History Does someone in your family have high blood pressure?	13	36.1	23	63.9	0.36	0.48
2	Do you have anyone from your family who smokes cigarette?	6	16.7	30	83.3	0.16	0.37
3	Patient previous history Have you ever been suffering from hypertension in pregnancy?	12	33.3	24	66.7	0.33	0.47
4	Heart disease Have you ever been suffering from any heart disease? If yes, then specify.	0	0	36	100	0	0
5	Do you have history of any blood disorder? If yes, then specify.	14	38.9	22	61.1	0.38	0.49
6	Renal disease Have you ever been suffering from any renal disease? If yes, then specify.	11	30.6	25	69.4	0.3	0.46
7	Stress Do you have stress at home or workplace?	33	91.7	3	8.3	0.91	0.28
8	Diabetic mellitus Have you ever been diagnosed with diabetes mellitus?	4	11.1	32	88.9	0.11	0.31
9	Is your fasting blood sugar greater than 100mg/dl?	4	11.1	32	88.9	0.11	0.31
10	Obstetric characteristics Did you undergo IVF (In Vitro Fertilization)?	9	25	27	75	0.25	0.43
11.	Do you have Twin pregnancy?	6	16.7	30	83.3	0.16	0.37

12. Behavioral characteristic smoking Do you have habit of smoking? If yes, then specify the time duration?	0	0	36	100	0	0
13. Tobacco chewing Do you have habit of chewing tobacco? If yes, then specify there duration?	0	0	36	100	0	0
14. Alcohol Do you have habit of drinking alcohol? If yes, then specify a. How much quantity? b. How much frequency? c. Specify the time duration?	0	0	36	0	0	0
15. Diet Does your diet contain fruits and vegetables in daily routine?	36	100	0	0	1	0
16. Does your diet contain high in fatty foods (Fatty Meat, Heavy Cream, Butter, Dark Chocolate, Cheese, Fatty Fish ect...)?	20	55.6	16	44.4	0.55	0.5
17. Does your diet contain high in salty food (Pickle, Papad)	26	72.2	10	27.8	0.72	0.45
18. Do you regularly take a diet rich in carbohydrates (sweet drinks and sugary foods)?	6	16.7	30	83.3	0.16	0.37
19. Do you take coffee regularly? If yes, how often?	24	66.7	12	33.3	0.66	0.47
20. Do you take tea regularly? If yes, how often?	12	33.3	24	66.7	0.33	0.47
21. Exercise Do you have any habit of exercising? If yes, then specify	24	66.7	12	33.3	0.66	0.47
22. Do you have adequate support from your family or friends during pregnancy?	24	66.7	12	33.3	0.66	0.47

This table shows that's 91.7% of the mothers had stress, 36.1% of the mother had family history, 16.7% of the antenatal mothers had history of family members smoke cigarette, 38.9% of the antenatal mothers had blood disorder, 33% of the mothers had renal disease, 33.3% of the mothers had patient previous history, 11.1% of the mothers had diabetic mellitus, 25% of the mothers had pregnancy undergo IVF, 16.7% of the mothers had twins pregnancy, 55.6% of the mothers had diet contain high in fatty foods, 72.2% of the mothers had diet contain high in salty food, 16.7% of the mothers had taken a diet rich in carbohydrates, 66.7% of the mothers had taken coffee regularly, 33.3% of the mothers had taken tea regularly, 33.3% of the mothers had no habit of exercise, 33.3% of the mothers had no adequate support from family and friends during pregnancy.

Section IV: - Description On Assessment Of Level Of Risk Of Associated Factors Of Hypertension In Pregnancy Among The Antenatal Mothers.

Table IV: - Assessment Of Level Of Risk Of Associated Factors Of Hypertension In Pregnancy Among Antenatal Mothers.

level of Risk of associated factors of hypertension in pregnancy	Score Range	Prevalence of hypertension	
		Frequency (f)	Percentage (%)

		0	0
No Risk	0	4	11.11
Mild Risk	0 to 6	31	86.11
Moderate Risk	7 to 12	1	2.78
Minimum score		6	
Maximum score		14	
Mean score		7.88 ± 1.54	
Mean % score		21.91 ± 4.29	

The above table shows that 11.11% of antenatal mothers had mild risk, 86.11% of them had moderate risk and 2.78% of them had severe risk of hypertension in pregnancy. Minimum score was 6 and maximum score was 14. Mean score was 7.88 ± 1.54 and mean percentage score was 21.91 ± 4.29.

Section V: Association Of Factors Related To Hypertension In Pregnancy Among Antenatal Mothers From Selected Hospital With Their Demographic Variables.

Table IV: Showing Overall Association Of Factors Related To Hypertension In Pregnancy Among Antenatal Mothers In Relation To Demographic Variables N=100

Demographic variable	Calculated value			df	Table value	Level of significance < 0.05	significance
	T - value	F - value	P - value				
Age		2.76	0.045	4,31	2.61	P<0.05	S
Religion		0.39	0.75	3,32	2.84	P>0.05	NS
Educational Status		0.99	0.40	3,32	2.84	P>0.05	NS
Occupation		0.56	0.69	4,31	2.61	P>0.05	NS
Type of family		0.65	0.52	2,33	3.23	P>0.05	NS
Area of residence		0.01	0.98	2,33	3.23	P>0.05	NS
Monthly family income		3.75	0.020	3,33	2.84	P<0.05	S
Type of diet		0.21	0.80	2,33	3.23	P>0.05	NS

Above the table show overall association factors related to hypertension in pregnancy, hence interpreted that age and monthly family income of antenatal mothers is statistically associated with their hypertension in pregnancy score.

CONCLUSION

The study concludes that after thorough analysis that, the prevalence of hypertension in pregnancy was high that other similar studies. The present study reports that hypertension during pregnancy is emerging as a major concern from a clinical and public health viewpoint, given that it could have serious short- and long-term consequences for maternal and offspring health. A substantial proportion of more than one-tenth of the pregnant women were found to be hypertensive in the present study. Primary care physicians have a critical role to play in the early identification and management of hypertension during early antenatal care.

RECOMMENDATION

- A similar study can be replicated on a large population for the generalization of the findings.
- A Study may be conducted to evaluate the effectiveness of planned teaching program on knowledge and associated factors of hypertension in pregnancy among antenatal mothers.

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