Original Article

Domestic Violence as a Risk Factor for Hypertensive Disorders of Pregnancy

Sumaira Yasmin, Tanveer Shafqat, Samina Sabir, Wajeeha Syed and Nazia Liaqat

ABSTRACT

Objective: This study aims to determine an association between domestic violence and increased risk of hypertensive disorders of pregnancy in our antenatal patients.

Study Design: Cross Sectional study

Place and Duration of Study: This study was conducted at the Obstetrics and Gynecology department, Lady Reading Hospital, Peshawar from March 2018 to February 2019.

Materials and Methods: Patients were recruited in third trimester of pregnancy by non-probability consecutive sampling after taking consent from ethical review board. Patients with a blood pressure of less than140/90 mmHg were normotensives and those above140/90 mmHg were considered as hypertensive. All patients meeting the inclusion criteria were interviewed for history of domestic violence according to a questionnaire. History of domestic violence encountered during last one year duration from the index pregnancy was obtained from hypertensive as well as normotensive antenatal patients. Type of domestic violence was ascertained whether they encountered physical, verbal (psychological) or sexual violence was recorded on a performa. Descriptive statistical analysis was done. Odds ratio with 95% CI was computed to determine the presence and strength of association between domestic violence and hypertension in pregnancy.

Results: Out of the total 228 patients, 114 were normotensives and 114 women were with hypertension in pregnancy. Both groups were comparable in their demographic characteristics of age, parity and level of education.Domestic violence was found in 55(48.24%) hypertensive patients and 49(42.6%) normotensives showing that percentage of hypertension is higher in those antenatal patients who has experienced domestic violence OR=1.423 (CI=0.844 -2.398).

Conclusion: Domestic violence is to be considered as a potential risk factor for hypertensive disorders of pregnancy. Pregnant women need to be screened for domestic violence so as to minimize the risk of hypertensive disorders of pregnancy.

Key Words: Domestic violence, Pregnancy, Gestational hypertension, Preeclampsia

Citation of article: Yasmin S. Shafqat T, Sabir S, Syed W, Liaqat N. Domestic Violence as a Risk Factor for Hypertensive Disorders of Pregnancy. Med Forum 2021;32(3):64-69.

INTRODUCTION

Pregnancy, despite being a physiological condition, is a stressful situation with a woman trying to adapt to the physiological changes of pregnancy and also adjusting for psychological stresses of childbearing, childbirth and forthcoming neonatal care with increasing responsibilities.[1,2] Theoretically these stresses may be exaggerated by the additional stress incurred by domestic violence.

Department of Obstetrics and Gynecology department, Lady Reading Hospital, Peshawar.

Correspondence: Dr. Samina Sabir, Assistant Professor, Department of Obstetrics and Gynecology department, Lady Reading Hospital, Peshawar.
Contact No: 0336-9373776
Email: sam_sabir@hotmail.com

Received: September, 2020
Accepted: November, 2020
Printed: March, 2021

Stress has long been thought to raise the blood pressure giving rise to terminologies like white coat hypertension. Moreover prenatal stressful environment has been implicated in many adverse outcomes through activation of the neuroendocrine hypothalamic–pituitary– adrenal axis with its effects on utero placental blood flow.[3]This utero placental insufficiency has been also implicated in hypertensive disorders of pregnancy.

The Hypertensive disorders of pregnancy have their own inherent risks and complications for both mother and fetus. Hypertensive disorders during pregnancy are classified into four categoriesby the National High Blood Pressure Education Program[4] as chronic hypertension, preeclampsia-eclampsia, preeclampsia superimposed on chronic hypertension and gestational hypertension. Gestational hypertension is referred to as a transient hypertension of pregnancy or chronic hypertension identified in the latter half of pregnancy.[5]

Domestic violence has been associated with maternal morbidities including hypertension .[6]Exposure to domestic violence and especially violence by the intimate partner was reported among ranging from 11% to 44.1% of women in different studies and 23%%

reported it in during the index pregnancy.[7]The use of physical force intentionally to inflict or intend to inflict trauma is the physical violence. Psychological or verbal violence encompasses threats, humiliation, restriction of activities, isolation, name calling, and attempts to frighten. Emotional violence was the most common form as in various studies.[8]Domestic violence may be inflicted either by the intimate partner (husband) or by the relatives in law of the patient with mother in law on top of the list in our society. There may be cases in which violence may be inflicted by other relations. Despite their anguish, women justified, normalized, and tolerated abuse; this acceptance reflected their cultural values and norms.[9]Complications of domestic violence in pregnancy may occur directly by incurring physical trauma to the uterus and the fetus like abruption, pre labor rupture of membranes and even intrauterine death of fetus and also affecting mental health and behavior.[10,11] Studies have revealed that Pregnant women in antenatal settings may be more likely to disclose IPV when screened.[12] keeping these facts in view, screening of domestic violence is imperative during the antenatal visits so as to avoid obstetric complications.

MATERIALS AND METHODS

It was a one year study conducted in Obstetrics and Gynaecology Department, Lady Reading Hospital Peshawar from March 2018 to February 2019.

Patients were recruited in study after taking permission from ethical review board and informed consent. Patients were selectedby non-probability consecutive random sampling with a calculated sample size of 200 by Open Epi. Patients were enrolled in study as per inclusion criteria as under;

Inclusion criteria: Patients in third trimester of pregnancy with singleton foetus. Patients were recruited in third trimester because gestational hypertension usually manifest after twenty weeks of gestation,

Exclusion criteria: Patients with any concomitant co morbidity like diabetes, renal or cardiac diseases were excluded from the study which would impose additional risk for hypertension. Multiple gestations were similarly excluded due to increased risk of preeclamsia and eclampsia which would be a source of bias in the study.

Blood pressures were checked so as to categorize them as normotensive or hypertensive. Blood pressure of 140/90 mmHg was taken as cutoff.[4] Patients Data was collected using a questionnaire (Annexure 1) administered by an interviewer who was a doctor on duty who was already briefed regarding history taking on domestic violence. Patients were interviewed in privacy after informed consent (Annexure 2) and were ensured that all data collected by this questionnaire would be confidential and patients partner or any member of the family cannot access this data. It was to eliminate the fear of the patient so as to reveal correct history of exposure to domestic violence without any hesitancy. History of domestic violence encountered during last one year was obtained. All of these patients were enquired regarding the type of domestic violence whether they encountered physical, verbal or sexual violence.

Our questionnaire was designed on the basis of HITS[13,14] which is a brief screening tool consisting of four questions that asks about physical hurts, insults, threats or screams over the prior 12 months. Questions were asked in accordance with this criterion and specifically for violence encountered in current pregnancy. Any mal treatment by husband or family members was also noted.

Data analysis: Data was analyzed using SPSS version 18 software by calculating odds Ratio for binary estimations and 95%Confidence Interval.

RESULTS

Total patients recruited in study were228. Patients with hypertension(group 1) presenting in third trimester of pregnancy (PIH/Pre-eclampsia/Eclampsia/Chronic HTN) were 114.Number of pregnant ladies in third trimester without hypertension (group 2) were 114 taken as control .The mean gestational age of both the cases and controls was(35.32 ± 3.43).Both the groups were comparable regarding their demographic variables.

Table No.1: Study sociodemographic Characteristics

Age; mean ± S.D		27.83 ± 5.74
Gestational age in weeks; mean ± S.D		35.32 ± 3.43
Education; n (%)	Primary education	59 (25.8)
	Secondary education	60 (26.2)
	Higher education	25 (10.9)
	Uneducated	85 (37.1)
Gravidity; n (%)	Primigravida	77 (33.6)
	Multigravida (G2-G4)	107 (46.7)
	Grand multi-gravida (G5 and above)	45 (19.7)
Type of hypertension; n (%)	Pregnancy induced hypertension	57 (50)
	Pre-eclampsia	26 (22.8)
	Chronic hypertension	20 (17.54)
	Eclampsia	11 (9.6)
Domestic violence		104 (45.4)
Type of domestic violence	verbal violence	87(83.65)
	Physical violence	15(14.4)
	Sexual violence	02(1.9)
Person inflicting violence	Husband/ intimate partner	65 (62.5)
	Relations in law	24 (23.1)
	Not Answered	15 (14.4)

The sociodemographic characteristics of both the groups are shown in (table no 1)Most of the patients

population was uneducated in both the groups 85 (37.1%)followed by those who had completed their primary level of education 59 (25.8%).

History of domestic violence was found in 55(48.24%) hypertensive patients and 49(42.6%) normotensives odds ratio =1.423 (CI= 0.844-2.114). The most common type of violence was psychological (emotional violence) 87(83.65%) and the most common perpetrator of violence was husband in 65 (62.5%)of the cases. (Table 2). The most common hypertensive disorder of pregnancy was pregnancy induced hypertension in 57 patients (50%) followed by Pre-eclampsia in 26 cases (22.8%). Percentage of Hypertension in Participants with or without Domestic Violence (n=114) is depicted in table (3).

Table No.2. Evaluation of study variables among participants with or without domestic violence

Study variables		Domestic violence		P-value
		Yes (n =104)	No (n =124)	
Age; Mean± S.D		28.33 ± 6	27.42 ± 5.51	0.230
Education; n (%)	Primary education	26 (25.0%)	33 (26.4%)	0.090
	Secondary education	31 (29.8%)	54 (43.2%)	
	Higher education	15 (14.4%)	10 (8.0%)	
	Uneducated	32 (30.8%)	28 (22.4%)	
Gravidity; n (%)	Primigravida	44 (42.3%)	33 (26.4%)	0.040
	Multigravida (G2-G4)	43 (41.3%)	64 (51.2%)	
	Grand multigravida (G5 and above)	17 (16.3%)	28 (22.4%)	
Period of gestation in weeks; Mean ± S.D		35.77 ± 3.51	34.94 ± 3.33	0.070
Normotensive; n (%)		49	65	0.391
Hypertensive; n (%)		55	59	
Type of hypertension; n (%)	Pregnancy induced hypertension	26 (47.2%)	31(52.54%)	0.060
	Pre-eclampsia	15 (27.27))	11 (18.64)	
	Eclampsia	5 (9.09)	6(10.16)	
	Chronic hypertension	9 (16.3)	11 (18.6)	

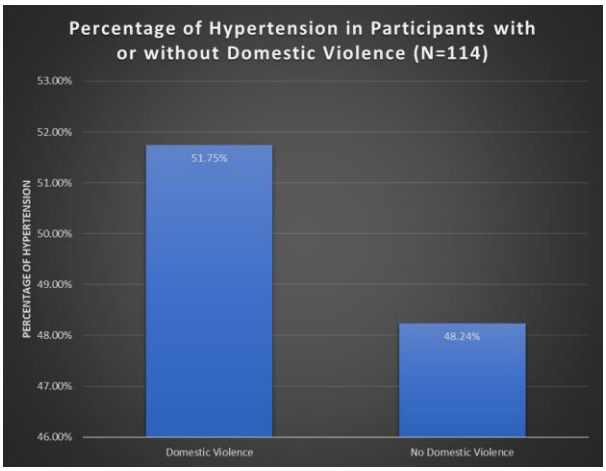
Table No.3: Percentage of Hypertension in Participants with or without Domestic Violence (n=114)

Participants	Normo-tensive; n =114	Hyper-tensive; N=114	Odds ratio	Confi-dence interval
Domestic violence (in last one year from index pregnancy)	49 (42.6%)	59 (51.75%)	1.423	0.844 - 2.398
No domestic violence (in last one year from index pregnancy)	65 (57.39%)	55 (48.24%)		

Annexure 1

Proforma: Domestic Violence as a Risk Factor for Hypertensive Disorders of Pregnancy

Name	
Husbands name	
Age	
Patients' education	
Husbands education	
Obstetric history gp + alive	
Period of gestation	
Previous history of hypertension	
Yes	
No	
Current blood pressure	
Type of hypertension	
Chronic hypertension	
Pregnancy induced hypertension	
Pre-eclampsia	
Eclampsia	
History of Domestic violence	
No	
Yes	
Person inflicting Violence	
Husband	
In laws	
Others	
Type of violence	
Physical(Hurts).	
Verbal(Insults, Threats for harm, Screaming)	
Sexual (unwanted sexual experiences)	



Graph No.1: Percentage of Hypertension in Participants with or without Domestic Violence (n=114)

DISCUSSION

In this study both the groups were comparable regarding their demographic variables. Mean age of patients was28.33 and 27.42years in hypertensive and normotensive group(p value 0.230),respectively. Most of the patients in our study were multigravidas 107 (46.7%). Most of the patient's population were uneducated in both the groups 85 (37.1%) however as secondary outcome measures, a higher percentage of domestic violence was found in uneducated patients (30.8%)as compared to those without domestic violence (22.4%). Women exposed to domestic violence were of younger age, higher parity, and lower educational level as in many studies[15.16]Amuch higher percentage 55.6% of uneducated patients was found in similar studies which also found domestic violence to be more prevalent in rural as compared to urban areas.[17]

Domestic and intimate partner violence is highly prevalent as much as one out of three women were found to have experienced some form of violence in a WHO(worlds health organization)report. Prevalence of violence in our study groups was quite high as it also included those cases who experienced gender based maltreatment by husband or in laws which was more common in our cultural setup. In accordance with many other studies[18,19] conducted on domestic violence, the most common type of violence implicated in our study was psychological or verbal violence in 87 cases (83.65%) followed by physical and sexual violence. Similar prevalence of different types of domestic violence was shown in a study by in which more frequent was psychological violence, followed by physical and sexual violence.

A combination of different types of violence was encountered by quite a number of these women. Once again verbal and physical violence was one of the most common combination of domestic violence. Most of the women who contracted physical violence have been facing psychological and verbal violence for quite a period of time before their physical abuse.

Regarding person inflicting the violence, Intimate partner violence was the commonest in which husband was the person inflicting the violence. Intimate partner violence(IPV) often leading to unintended pregnancies with all its inherent psychological risks.[20,21]Relatives in law were the second most common persons inflicting the violence (24 %).Amongst these the mother in law was answered by many of the participants to be involved in inflicting the violence followed by other relations in law. Culturally and as a custom in this part of the world where the head of the families being the parents in law (specially in those cases where they are the major earning sources) they are supposed to have every right to inflict verbal or psychological influence on their young married descendants whom they are supporting financially. This occurs more so in younger daughters in law with earlier marriages. These factors were also highlighted in a study by Kaye which narrated that staying with co-wife, adolescent pregnancy and the first pregnancy were significantly associated with domestic violence.[22]

About 15 %of the women have not answered the person conflicting the violence which shows rather their extreme fears and psychological status that they did not answer even after ensuring confidentiality. They were unable to alleviate their fears sand were afraid to pinpoint the person inflicting the violence lest they may end up in trouble and may become the victim of violence again .Due to the recall bias some women were not able to recall the episodes of domestic violence in the earlier gestations

While Comparing the Percentage of Hypertension in Participants with or without Domestic Violence (table 3), a higher percentage of hypertension in pregnancy (57.39%)was found in patients who had a history of domestic violence compared to (51.75%) without domestic violence. Odds ratio was1.25 with p-value 0.039(95%CI 0.7-2.114) depicting an increase in the odds of hypertension in patients with a history of violence. A stronger association was found in other studies. A study by Ebrahimi et al[23] which revealed a 2.07-fold increased risk of preeclampsia compared to those who were not exposed to IPV.

Our study findings were also augmented by another study which showed that women with intimate partner violence in a year prior to index pregnancy had an increased risk of high blood pressure or edema.[24] Higher strength of association between domestic violence and preeclampsia in these studies could be due to their larger sample sizes. Thus domestic violence or intimate partner violence poses a risk factor for hypertensive disorders of pregnancy.In a study by Han it was shown that unintended pregnancies and adverse maternal out comes including hypertension and pre-eclampsia were more common in patients with intimate

partner violence.[25]This increased risk was also shown by Bellizzi.[26] specifically in Women of under developed countries having an increased risk of violence, which in turn poses a risk factor for hypertensive complications in pregnant population.

Domestic violence is a potential risk factor for hypertensive disorders of pregnancy therefore it seems prudent to screen women of childbearing age for domestic violence (DV), provide them support and services. These women need proper referral to the intervention services.[16] Proper screening of pregnant women for domestic violence is very important at earlier gestation or even preconception screening may play an important role for a better counselling of patient as well as those involved in inflicting the violence so as to reduce the maternal risk of hypertension.More vigilance in antenatal monitoring of patients with domestic violence will help to reduce and prevent obstetric complications associated with it and achieve the goal of good maternal and fetal outcome of pregnancy.

CONCLUSION

Domestic violence in pregnant women should be considered as a potential risk factor for hypertensive disorders of pregnancy like gestational hypertension, preeclampsia and eclampsia.

Recommendations: Studies on large population may reveal a stronger association of domestic violence with hypertensive disorders of pregnancy. Antenatal patients presenting with a history of domestic violence should be monitored more vigilantly for developing any signs and symptoms of hypertension in pregnancy during their routine antenatal visits

Author's Contribution:

Concept & Design of Study:	Sumaira Yasmin
Drafting:	Tanveer Shafqat, Samina Sabir
Data Analysis:	Wajeeha Syed, Nazia Liaqat
Revisiting Critically:	Sumaira Yasmin, Tanveer Shafqat
Final Approval of version:	Sumaira Yasmin

Conflict of Interest: The study has no conflict of interest to declare by any author.

REFERENCES

1. Lobel M, Cannella DL, Graham JE, DeVincent C, Schneider J, Meyer BA. Pregnancy-specific stress, prenatal health behaviors, and birth outcomes. Health Psychol 2008;27(5):604–615.
2. Ochoa RG, Sánchez-Rodríguez EN, Anahi Chavarría, Gabriel Gutiérrez-Ospina, Tania Romo-González, "Evaluating Stress during Pregnancy: Do We Have the Right Conceptions and the Correct Tools to Assess It?" J Pregnancy 2018; Article ID 4857065:20. https://doi.org/10.1155/2018/4857065
3. 3)Wadhware PD, Dunkel-Schetter C, Chikz-DeMet A, Porto M, Sandman CA. Prenatal psychosocial factors and the neuroendocrine axis in human pregnancy. Psychosomatic Med 1996;58:432–446.
4. Roccella EJ. Report of the National High Blood Pressure Education Program Working Group on High Blood Pressure in Pregnancy. Am J Obstet Gynecol 2000;183(1): S1–S22.
5. Liu CM, Cheng P, Chang SD. Maternal Complications and Perinatal Outcomes associated with Gestational Hypertension and Severe Preeclamsia in Taiwanese Women. J Formes Med Assoc 2008;107(2):129-138.
6. Silverman, et al. Maternal morbidity associated with violence and maltreatment from husbands and in-laws: findings from Indian slum communities. Reproductive Health 2016; 13:109.
7. World Health Organization. Global and regional estimates of violence against women: prevalence and health effects of intimate partner violence and non-partner sexual violence. Geneva: WHO; 2013. Available: https://www.who.int/reproductivehealth/publications/violence/9789241564625/en/
8. Chasweka R, Chimwaza A, Maluwa A. Isn't pregnancy supposed to be a joyful time? A cross-sectional study on the types of domestic violence women experience during pregnancy in Malawi. Malawi Med J 2018;30(3):191–196.
9. CokkinidesVE, Coker AL, Sanderson M, Addy C, Bethea L. Physical violence during pregnancy: maternal complications and birth outcomes. Obstet Gynecol 1999; 93:661–666.
10. Alhusen JL, Ray E, Sharps P, Bullock L. Intimate partner violence during pregnancy: maternal and neonatal outcomes. J Women's Health (Larchmt) 2015;24(1):100-106.
11. Kiely M, El-Mohandes AA, Gantz MG, Chowdhury D, Thornberry JS, El-Khorazaty MN. Understanding the association of biomedical, psychosocial and behavioral risks with adverse pregnancy outcomes among African-Americans in Washington, DC. Maternal Child Health J 2011;15 (Supple 1): S85-95.
12. Silverman JG, Decker MR, Reed E, Raj A. Intimate partner violence victimization prior to and during pregnancy among women residing in 26 U.S. states: associations with maternal and neonatal health. Am J Obstet Gynecol 2006; 195(1):140-8.
13. Sherin KM, Sinacore JM, Li XQ, Zitter RE, Shakil A. HITS: a short domestic violence screening tool for use in a family practice setting. Fam Med 1998;30(7):508-12.

14. Shakil A, Bardwell J, Sherin K, Sinacore JM, Zitter R, Kindratt TB. Development of Verbal HITS for intimate partner violence screening in family medicine. Fam Med 2014;46(3):180-5.
15. Doi S, Fujiwara T, Isumi A. Development of the Intimate Partner Violence During Pregnancy Instrument (IPVPI). Front Public Health 2019;7:43.
16. Garcia-Moreno C, Jansen HA, Ellsberg M, Heise L, Watts CH. Prevalence of intimate partner violence: findings from the WHO multi-country study on women's health and domestic violence. Lancet 2006; 368:1260-9.
17. Nasir K, Hyder AA. Violence against pregnant women in developing countries: review of evidence. Eur J Public Health 2003;13:105–107.
18. Hashemi Nasab L. Assessment of prevalence, outcome and factors related to domestic physical violence in pregnant women referring to delivery departments of Sanandaj hospitals. SJKU 2007; 11:32-41.
19. Kargar Jahromi M, Jamali S, Rahmanian Koshkaki A, Javadpour S. Prevalence and Risk Factors of Domestic Violence Against Women by Their Husbands in Iran. Glob J Health Sci 2015;8(5): 175-183.
20. Sharman LS, Douglas H, Price E, Sheeran N, Dingle GA. Associations Between Unintended Pregnancy, Domestic Violence, and Sexual Assault in a Population of Queensland Women. Psychiatr Psychol Law 2018;26(4):541-552.
21. Plichta SB. Intimate partner violence and physical health consequences: policy and practice implications. J Interpers Violence 2004;19(11): 1296-323.
22. Kaye D, Mirembe F, Bantebya G. Risk factors, nature and severity of domestic violence among women attending antenatal clinic in Mulago Hospital, Kampala, Uganda. Cent Afr J Med 2002;48(5-6):64-68.
23. Ebrahimi, et al. The Prevalence of Domestic Violence and Its Association with Gestational Hypertension in Pregnant women. Int J Health Studies 2017. ISSN 2423-6594.
24. Dahlen HG, Munoz AM, Schmied V, et al. The relationship between intimate partner violence reported at the first antenatal booking visit and obstetric and perinatal outcomes in an ethnically diverse group of Australian pregnant women: a population-based study over 10 years. BMJ Open 2018;8:e019566.
25. Han A, Stewart DE. Maternal and fetal outcomes of intimate partner violence associated with pregnancy in the Latin American and Caribbean region. Int J Gynaecol Obstet 2014;124(1):6-11.
26. Bellizzi S, Nivoli A, Salaris P, Ronzoni AR, Pichierri G, Palestra F, et al. Sexual violence and eclampsia: analysis of data from Demographic and Health Surveys from seven low- and middle-income countries. J Glob Health 2019;9(2):020434.