

MEDICAL DISORDERS IN PREGNANCY AMONG IN PATIENTS AT A TERTIARY LEVEL HOSPITAL OF PESHAWAR (KHYBER PAKHTUNKHWA)

Rubina Akhtar¹, Rukhsana Karim², Nasreen Kishwar³, Saba Safdar⁴

How to cite this article

Akhtar R, Karim R, Kishwar N, Safdar S. Medical Disorders in Pregnancy Among Inpatients at a Tertiary Level Hospital of Peshawar (Khyber Pakhtunkhwa). J Gandhara Med Dent Sci. 2024;11(2):28-31

Date of Submission: 07-11-2023

Date Revised: 15-03-2024

Date Acceptance: 16-03-2024

¹Associate Professor, MTI, Hayatabad Medical Complex, Peshawar

³Assistant Professor, MTI, Hayatabad Medical Complex, Peshawar

⁴Specialist Registrar, MTI, Hayatabad Medical Complex, Peshawar

Correspondence

²Rukhsana Karim, Assistant Professor, MTI, Hayatabad Medical Complex, Peshawar

☎: +92-331-9278486

✉: drrukhsanakarim@hotmail.com

<https://doi.org/10.37762/jgm.11-2.572>

ABSTRACT

OBJECTIVES

This study aimed to determine the prevalence, type, and demographic makeup of pregnancy-related medical conditions among patients receiving treatment in a tertiary care facility.

METHODOLOGY

The Monocentric retrospective impact study was conducted in the Department of Obstetrics and Gynaecology of MTI, Hayatabad Medical Complex Peshawar, from January to December 2022. Case records of all pregnant women (n=1811) with previous or recently developed medical conditions treated during the study period were collected from the records / medical registers, and all the information was recorded in a pre-structured proforma. All women with previous or recently developed medical conditions treated during the study were included. All pregnant women without any medical conditions were excluded. Data was analyzed using simple statistical measures, and the results were presented as frequency percentages. Prior approval from the institution's ethical committee was obtained to conduct the study.

RESULTS

Among 6327 antenatal admissions, 1811 (28.62%) women had medical disorders. The most common medical disorder was PIH, reported in 384 (21.20%) of the females, followed by RH incompatibility and Gestational Diabetes Mellitus (GDM) seen in 235 (12.98%) and 205 (11.32%) females, respectively. Other notable medical conditions include UTI in 170 (9.39%), Chronic HTN in 134 (7.40%), iron deficiency anemia in 122 (6.74%), and pre-eclampsia in 100 (5.52%) of women.

CONCLUSION

Pre-existing medical conditions in pregnancy are not uncommon. Early recognition of acute illness and treatment of chronic conditions in pregnancy is of clear benefit and needs to be managed to arrest any adversaries to the mother and fetus.

KEYWORDS: Pregnancy, Medical Disorder, Hypertension

INTRODUCTION

Pregnancy is a state in which physiological changes in a woman's body are essential to accommodate fetal growth and development. Pregnancy is a beautiful event in a woman's life; however, it is not without risks with the existence of chronic conditions. Pre-existing or new medical conditions unveiled during pregnancy can have profound implications and may complicate the pregnancy. In some conditions, pregnancy is contraindicated, while in others, early termination may be necessary for the health of the mother and fetus. According to studies, 20% of maternal deaths occur due to pre-existing conditions that are intensified by pregnancy or its management.¹ MBRRACE (Confidential Enquiries into Maternal Deaths and Morbidity) 2021 reported that 59% of women died due to indirect causes, primarily cardiac and neurological

diseases.² Although the rate of maternal mortality has decreased worldwide however, the burden of noncontagious diseases like diabetes, heart disease, and chronic respiratory disease is showing an upward trend in the period of pregnancy, especially in low and middle-income countries.^{3,4} Hitherto, any medical disorders during pregnancy had a much worse outcome in terms of both maternal and fetal health. Fortunately, like all other sectors, advancements in maternal/fetal medicine, obstetric anesthesia, and pediatrics have enabled women to become pregnant despite having chronic medical conditions.⁴ The upward trend in the incidence of medical disorders in pregnancy is primarily due to a complex chemistry between demographic and lifestyle factors and advances in modern medicine. Chances of acquiring medical disorders such as hypertension and obesity are higher in women delaying childbirth until later in life. So, they

are also at higher risk of gestational diabetes and venous thromboembolism.⁵ Medical problems in pregnancy represent a substantial challenge to the healthcare system as it dominates the list of leading causes of maternal deaths.^{6,7,2} Therefore, all physicians must be well-trained and thoroughly understand the medical problems during pregnancy. The management of pregnancy with pre-existing medical problems should begin before conception. Pre-pregnancy counseling with women of reproductive age should be made part of their routine inpatient or outpatient, and women with medical conditions shall be informed about the latent adverse effects of the disease on pregnancy outcome and vice versa. These women shall be emphasized to ensure regular antenatal checkups and investigations to effectively manage the pregnancy and adverse medical conditions simultaneously. Furthermore, this shall ensure that the services are appropriately designed to treat women with medical conditions pre-pregnancy, during pregnancy & delivery, and postpartum. Western communities have addressed this problem significantly by introducing obstetric medicine, which has enabled prompt diagnosis and treatment of medical disorders, resulting in marked improvements in pregnancy and fetal outcomes.^{6,8} In contrast, the situation in underdeveloped countries is far from satisfactory, and much needs to be done to deal with medical complications in pregnancy effectively. This study aimed to determine the prevalence, type, and demographic makeup of pregnancy-related medical conditions among patients receiving treatment in a tertiary care facility.

METHODOLOGY

This monocentric retrospective impact study was conducted in the Department of Obstetrics and Gynaecology of MTI, Hayatabad Medical Complex Peshawar, from January to December 2022. This tertiary care hospital receives all kinds of patients, including complicated cases referred by other health care units from the surrounding areas. Case records of all pregnant women (n=1811) with previous or recently developed medical conditions treated during the study period were collected from the records / medical registers, and all the information was recorded in a pre-structured proforma. All women with previous or recently developed medical conditions treated during the study were included. All pregnant women without any medical conditions were excluded. Data was analyzed using simple statistical measures, and the results were presented as frequency percentages. Prior approval from the institution’s ethical committee was obtained to conduct the study. Ethical Approval No. 1270, Dated:10-04-2023.

RESULTS

In this study, a total of 6327 antenatal patients were admitted; among these, 1811 (28.3%) patients had medical disorders. The highest frequency of medical conditions (1443, 79.68%) existed in the optimal age of reproduction, while 20.32% (368) patients were in the lower and upper age brackets. For parity, almost half of the patients (912, 50.36%) were multigravida, followed by Grand multigravida with an incidence of 558 (30.81%). (Table-1)

Table 1: Demographic Profile of Patients

Category		Frequency	%age
Age	< 20	211	11.65
	20-35	1443	79.68
	> 35	157	8.67
Parity	Primigravida	312	17.23
	Multigravida	912	50.36
	Grand multigravida	558	30.81
	Great Grand multigravida	29	1.60

Table 2: Classification and Frequency of Medical Disorders in Pregnancy

Group Classification	Disease Type	Frequency	%age
Hypertensive disorders (n=668, 36.88%)	Chronic HTN	134	7.40
	PIH	384	21.20
	Pre-eclampsia	100	5.52
	Eclampsia	50	2.76
Diabetes (n=322, 17.78%)	GDM	205	11.32
	DM1	28	1.55
	DM2	89	4.91
Hematological disorders (n=438, 24.19%)	Iron deficiency anemia	122	6.74
	Aplastic anemia	04	0.22
	Thalassemia	50	2.76
	RH incompatibility	235	12.98
	ITP	19	1.05
	Leukemia	06	0.33
	DVT	02	0.11
Renal and Urinary tract (n=175, 9.67%)	UTI	170	9.39
	Pyelonephritis	05	0.28
Infectious (n=130, 7.18%)	HBsAg	63	3.48
	HCV	43	2.37
	HEV	08	0.44
	HIV	10	0.55
	Typhoid Dengue	01 05	0.06 0.28
Auto-immune disorders (n=11, 0.61%)	APLS	10	0.55
	SLE	01	0.06
Respiratory disorders (n=1, 0.06%)	Respiratory Disease	01	0.06
Cardiac (n=24, 1.33%)	Cardiac Disease	24	1.33
Neurological disorders (n=14, 0.77%)	Epilepsy/fits	14	0.77
Thyroid disorders (n=6, 0.33%)	Thyroid Diseases	06	0.33
Liver disorders (n=22, 1.22%)	Hepatic disease	01	0.06
	Obstetric cholestasis	21	1.16

Hypertensive disorders were the highest prevalent conditions (668, 36.88%) among pregnant women. PIH was the most typical form of hypertension, affecting 384 (21.20%) of the patients. Other types of hypertension included chronic hypertension seen in 134 (7.40%) patients, pre-eclampsia in 101 (5.58%), and 49 (2.71%) patients who suffered from eclampsia. Hematological disorders were found in 438 (24.19%) of the pregnant women, the prominent conditions being Rh incompatibility (235, 12.98%), Iron deficiency anemia (122, 6.74%), and Thalassemia (50, 2.76%). Diabetes (322, 17.78%) and Renal & Urinary tract (175, 9.67%) were also among the noteworthy medical disorders. (Table-2)

DISCUSSION

In this study, the incidence of medical disorders in pregnancy was 28.62%. This is comparable to the 24.5% incidence reported by Babah et al. and other studies where the recounted incidence ranges from 20 to 27 %. Compared to other individual studies, it is lower than the 40% reported by Khattak et al. and higher than the 2.4% reported by Baral et al. However, it is well placed close to the median, considering a range of studies where the reported incidence ranges from 2% to 60%.^{9,10,11} Excluding hypertensive disorders and anemia, as some authors consider to be obstetrics-related issues, the incidence of medical disorders in pregnancy in this study falls to 18.26%, which is comparable to 16% reported by Agwu et al.¹¹ Regarding age, in the current study, 1443 (79.68%) patients fall in the age range of 20 to 35 years. Our findings are comparable to several studies that reported a higher frequency of medical disorders in the peak age of reproduction.^{1,12,13} In the current study, hypertensive disorders during pregnancy were observed to be the most common medical condition affecting (668, 36.88%) of the patients. Among the hypertensive disorders, PIH was found in 384 (21.20%) of the patients, chronic hypertension in 134 (7.40%) patients, pre-eclampsia in 101 (5.58%), and eclampsia in 49 (2.71%) patients. Other studies also reported a high incidence of hypertensive disorders in pregnancy, with 39% and 42.3%, respectively. However, Ye et al. showed a low incidence of 5.22%.^{10,14,15} In a study conducted in Nigeria, hypertensive disorders ranked second, after malaria, with a frequency of 29.2%.¹¹ Similarly, another study reported that Chronic hypertension occurs in approximately 1 to 5% of pregnancies, gestational hypertension in around 5 to 6%, and pre-eclampsia in nearly 3 to 6% of pregnancies based on population data.¹⁶ Hematological disorders, in this study, were found in 438 (24.19%) of the pregnant women; the prominent conditions being Rh incompatibility (235, 12.98%), Iron deficiency anemia

(122, 6.74%) and Thalassemia (50, 2.76%). Other forms of hematological disorders included ITP (19, 1.05%), Leukemia (6, 0.33%), aplastic anemia (4, 0.22%) and DVT (2, 0.11%). Another study also reported hematological disorders as a significant contributor (38.75%) to the medical disorders.¹⁴ However, the subtypes of hematological disorders are inconsistent with those in our study. Diabetes was also a significant finding in this study, affecting 322 (17.78%) patients. GDM was prevalent in 205 (11.32%) patients, while DM1 and DM2 were found in 28 (1.55%) and 89 (4.91%) patients respectively. A study by Khattak et al. found that 11.7% of patients developed GDM and 2.9% developed DM.¹⁰ Similarly, another study reported a similar result of 10.84% GDM occurrence.⁴ The present study identified renal and urinary tract infections as the fourth major group of medical disorders affecting 175 (9.67%) patients. This finding is consistent with the study by Baral G. et al., who reported a prevalence of 10.9% and ranked it as the second most common medical disorder.¹ Another survey by Shahana et al. also ranked UTI as the second most common medical condition with a relatively higher rate of incidence (14.78%).⁴ A separate study by Mukherjee et al. stated that the incidence of UTIs in pregnancy was 8%, which is nearly similar to this study.¹⁷ In the infectious disease group with an overall incidence of 130 (7.18%), Hepatitis B infection was found to be the most common type in 63 (3.48%) patients, followed by HCV in 43 (2.37%). This finding is closely reliable to the study by Khattak SN et al.; however, in the developed regions, very low incidence of HBV and HCV (Eastern Europe - 0.366%, Southern areas of Asia - 0.162% and United Kingdom - 0.019%) have been recounted which is indicative of a robust antenatal and postnatal health care in these countries.^{10,18}

LIMITATIONS

While this single-center, retrospective study has limitations, it provides a foundation for future research to build upon and improve our knowledge of the subject. It would be valuable to conduct a multicenter, prospective study to gain a more comprehensive understanding of the topic.

CONCLUSIONS

Medical disorders are not uncommon in pregnancy and pose significant threats to fetal health and survival. Hypertensive disorders, anemia, gestational diabetes, and urinary tract infections are some of the most common conditions that Obstetricians have to deal with. pregnancy is a valuable event in the life of a woman, and better outcomes must be ensured by

employing multidisciplinary intervention when needed.

CONFLICT OF INTEREST: None

FUNDING SOURCES: None

REFERENCES

- Baral G, Joshi R, Subba P, Pokhrel S, KC S, Baree ZA. Medical Disorders of Pregnancy among Inpatients at a Tertiary Level Hospital. *Nepal Journal of Obstetrics & Gynaecology*. 2017 Jan 1;12(1), 8-11.
- Knight M, Bunch K, Tuffnell D, Jayakody H, Shakespeare J, Kotnis R, Kenyon S, Kurinczuk J. *Saving Lives, Improving Mothers' Care-Lessons learned to inform maternity care from the UK and Ireland Confidential Enquiries into Maternal Deaths and Morbidity 2017-19*. Oxford: University of Oxford, 2021.
- World Health Organization. *Maternal mortality measurement: guidance to improve national reporting*. World Health Organization; 2022 Jun 30.
- Pervin MS, Begum MM, Rahman J. Medical Disorders of Pregnancy in Patients at Dhaka National Medical Institute Hospital. *Medicine Today*. 2020 Aug 29;32(2):122-5.
- Narayan B, Nelson-Piercy C. Medical problems in pregnancy. *Clinical Medicine*. 2017 Jun;17(3):251-7.
- Hinkosa L, Tamene A, Gebeyehu N. Risk factors associated with hypertensive disorders in pregnancy in Nekemte referral hospital, from July 2015 to June 2017, Ethiopia: case-control study. *BMC pregnancy and childbirth*. 2020 Dec;20:1-9.
- Cox R, Granne I. Common symptoms in pregnancy. *InnovAiT*. 2020 Jul;13(7):409-13.
- Han VX, Patel S, Jones HF, Nielsen TC, Mohammad SS, Hofer MJ, Gold W, Brilot F, Lain SJ, Nassar N, Dale RC. Maternal acute and chronic inflammation in pregnancy is associated with common neurodevelopmental disorders: a systematic review. *Translational psychiatry*. 2021 Jan 21;11(1):71.
- Babah OA, Owie E, Ohazurike EO, Akinajo OR. Prevalence and pattern of medical disorders in pregnancy at the time of delivery at Lagos University Teaching Hospital, Lagos, Nigeria. *Sub-Saharan African Journal of Medicine*. 2018 Jul 1;5(3):93.
- Khattak SN, Tariq A, Khattak MI, Malik TM, Shahid R, Hadi S. Medical disorders in pregnancy a tertiary care hospital experience. *The Professional Medical Journal*. 2022 Jul 31;29(08):1227-32.
- Onoh RC, Onyebuchi KA, Mamah JE, Anozie BO, Kenneth EC, Chidi EO. Obstetric outcome of pregnancies complicated by hypertensive disorders of pregnancy. *Sahel Medical Journal*. 2020 Jul 1;23(3):141-6.
- Shrivastva S, Malik N. Medical disorders in pregnancy and pregnancy outcome; A retrospective analysis. *Int J Reprod Contracept Obstet Gynecol*. 2018 Jun 1;7(6):2419-2.
- Medha S, Srilakshmi A, Mamatha P, Ala M. The study of medical disorders in pregnancy among inpatients in a tertiary care hospital. *Int J Acad Med Pharm*. 2023;5(2):594-603.
- Chaudhary S, Singhal SR, Chauhan MB, Gupta A, Dalal M. Study of medical disorders in pregnancy among in patients at a tertiary care hospital in Haryana, India. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology*. 2019 Sep 1;8(9):3770-4.
- Yang Y, Xie Y, Li M, Mu Y, Chen P, Liu Z, Wang Y, Li Q, Li X, Dai L, Liang J. Characteristics and fetal outcomes of pregnant women with hypertensive disorders in China: a 9-year national hospital-based cohort study. *BMC Pregnancy and Childbirth*. 2022 Dec 9;22(1):924.
- Nemani L. Hypertensive Disorders in Pregnancy. *Indian Journal of Cardiovascular Disease in Women WINCARS*. 2018 Aug;03(02/03):068-78.
- Mukherjee A, Mukherjee A. URINARY TRACT INFECTION IN PREGNANCY. *Journal of Evolution of Medical and Dental Sciences*. 2018 Sep 24;7(39):4313-7.
- Cortina-Borja M, Williams D, Peckham CS, Bailey H, Thorne C. Hepatitis C virus seroprevalence in pregnant women delivering live-born infants in North Thames, England in 2012. *Epidemiology & Infection*. 2016 Feb;144(3):627-34.

CONTRIBUTORS

- Rubina Akhtar** - Concept & Design; Data Acquisition; Drafting Manuscript; Supervision; Final Approval
- Rukhsana Karim** - Data Analysis/Interpretation; Critical Revision; Final Approval
- Nasreen Kishwar** - Data Analysis/Interpretation; Critical Revision; Final Approval
- Saba Safdar** - Data Analysis/Interpretation; Critical Revision; Final Approval



LICENSE: JGMDS publishes its articles under a Creative Commons Attribution Non-Commercial Share-Alike license (CC-BY-NC-SA 4.0).

COPYRIGHTS: Authors retain the rights without any restrictions to freely download, print, share and disseminate the article for any lawful purpose.

It includes scholarly networks such as Research Gate, Google Scholar, LinkedIn, Academia.edu, Twitter, and other academic or professional networking sites.