Pakistan Journal of Intensive Care Medicine
eISSN: 2708-2261; pISSN: 2958-4728
www.pjicm.com
DOI: https://doi.org/10.54112/pjicm.v5i02.111
*Pak. J. Inten. Care Med., volume 5(2), **2025**: 111*
Original Research Article

FETOMATERNAL OUTCOME IN OBESE PREGNANT WOMEN WITH PREGNANCY INDUCED HYPERTENSION VISITING LIAQAT MEMORIAL HOSPITAL, KOHAT

SALEEM M*, JABIN M

Department of Obstetrics & Gynaecology, Liaqat Memorial Hospital, Kohat, Pakistan
**Corresponding author email address:* mariasaleem760@gmail.com

(Received, 05th May 2025, Revised 08th June 2025, Accepted 06th July, Published 15th July 2025)

ABSTRACT

Background: *Obesity and pregnancy-induced hypertension (PIH) are independently associated with adverse fetomaternal outcomes. When occurring together, they may significantly increase maternal and perinatal morbidity and mortality. Timely identification of complications can guide preventive strategies.* ***Objective:*** *To evaluate the fetomaternal outcomes in obese pregnant women with pregnancy-induced hypertension presenting at Liaqat Memorial Hospital, Kohat, Pakistan.* ***Study Design:*** *Descriptive observational study.* ***Setting:*** *Department of Obstetrics and Gynecology, Liaqat Memorial Hospital, Kohat.* ***Duration of Study:*** *23-08-2024 to 23-02-2025.* ***Methods:*** *A total of 127 obese pregnant women (BMI ≥30 kg/m²) aged 15–45 years with singleton pregnancies and diagnosed with PIH were enrolled. Fetomaternal outcomes assessed over a 42-day follow-up included eclampsia, HELLP syndrome, placental abruption, fetal growth restriction, preterm birth, fetal hypoxia, perinatal death, and maternal mortality. Data were analyzed using descriptive statistics.* ***Results:*** *The mean age of participants was 28.52 ± 8.89 years. Maternal complications observed were eclampsia in 14.2% of cases, HELLP syndrome in 3.9%, and placental abruption in 7.1%. Fetal complications included fetal growth restriction in 16.5%, preterm birth in 15.7%, fetal hypoxia in 6.3%, and perinatal death in 3.9% of cases. Maternal mortality was recorded in 4.7% of the participants.* ***Conclusion:*** *Among fetal outcomes, fetal growth restriction and preterm birth were the most common complications. In maternal outcomes, eclampsia and placental abruption were the most frequently observed. These findings highlight the need for vigilant monitoring and multidisciplinary management of obese pregnant women with PIH to reduce adverse outcomes.*

Keywords: Obesity, Pregnancy-Induced Hypertension, Fetomaternal Outcomes, Eclampsia, Preterm Birth, Perinatal Mortality

INTRODUCTION

Hypertensive disorders of pregnancy, which include chronic hypertension, HELLP syndrome, and preeclampsia, pose significant medical risks for both mother and baby. Despite the enforcement of appropriate prenatal care that involves vigilant monitoring for pre-eclampsia as well as prompt delivery to minimize adverse outcomes, mortality and morbidity rates persist. Hypertension during pregnancy represents significant risks, with primary concern being potential progression to pre-eclampsia and eclampsia (1-3).

Pregnancy-induced hypertension substantially contributes to maternal as well as perinatal morbidity. Approximately 15% of maternal deaths are due to hypertension, establishing it as the second-greatest cause for maternal mortality. Severe hypertension raises the risk of cardiac failure, renal failure, and cerebrovascular accidents in the mother. The fetus faces increased chances of complications (4). Hypertensive disorders are the most prevalent health issues during pregnancy, with a prevalence of 5–10% (5, 6). PIH indicating genetic predisposition, emotional strain, rheumatic arthritis, as well as overweight, as well as low socioeconomic status (7-9). A study found that the overall prevalence of hypertensive disorders in pregnancy was 12%, making it the most prevalent reason for maternal death, accounting for 20.7% of those fatalities (10).

Obese pregnant women are at a greater risk for complications, particularly gestational hypertension. Obesity has been suggested to elevate the risk of gestational hypertension via metabolic disturbances and elevated inflammation, which adversely affect placental blood flow as well as implantation. Obesity, characterized by elevated adipose tissue levels, has been linked with heightened insulin resistance and pro-inflammatory markers that worsen the condition of endothelial cells as well as elevate the risk of PIH (11-13). According to a study in obese patients with PIH, the reported frequency of eclampsia was16.7%, disseminated intravascular coagulation 25%, maternal mortality 5.6%, small for gestational age 13.7%, and NICU admission was 3l.6% (13).

The risk of several illnesses is known to rise with obesity, which is a global health concern. Obesity and the results of PIH in pregnant women are specifically related; however, this association is not entirely understood due to the paucity of data in the literature. We can learn more regarding potential preventative strategies and treatments (which will aid healthcare professionals in better managing such patients) by examining how obesity may alter the results of PIH.

METHODOLOGY

This descriptive observational study was conducted at the Department of Obstetrics and Gynecology, Liaqat Memorial Hospital, Kohat, after obtaining ethical clearance. The study duration was from 23-08-2024 to 23-02-2025. A non-probability consecutive sampling technique was employed to enroll 127 obese pregnant women (BMI ≥30 kg/m²) aged 15 to 45 years with singleton pregnancies confirmed by ultrasound, having any parity. We excluded those with chronic hypertension, diabetes, renal or liver disease, previous seizures, or scarred uterus. The sample size was calculated using the maternal mortality rate of 5.6% (14), 95% confidence interval, and 4% margin of error.

Each patient gave their consent to participate in the study. Patients' baseline demographics, which included age, gestational age, parity, BMI, education level, socioeconomic status, monthly family income, and residential status, were documented. Pregnancy-induced hypertension was defined as systolic blood pressure ≥140 mmHg recorded on two occasions at least four hours apart after 20 weeks of gestation without proteinuria. Fetomaternal outcomes were carefully monitored and recorded. Eclampsia was identified by tonic-clonic seizures in pre-eclamptic women without other organic causes.

HELLP syndrome was diagnosed through the triad of hemolysis (microangiopathic blood smear), elevated liver enzymes, and low platelet count. Placental abruption refers to the premature separation of a normally implanted placenta after viability. Fetal growth restriction indicated birth weight below the 10th percentile for gestational age. Preterm birth was delivery before 37 completed weeks. Fetal hypoxia was determined by evidence of oxygen deprivation through electronic monitoring or umbilical cord blood gases. Perinatal death included fetal/neonatal deaths ≥1000g between 28 weeks of gestation to 7 days postnatal, and maternal mortality encompassed any pregnancy-related death during pregnancy or within 42 days postpartum. Participants received follow-up evaluations every two weeks for 42 days postpartum.

Data analysis utilized SPSS 26 with categorical variables presented as frequencies/percentages and continuous variables as mean±SD or median (IQR). Stratified analyses were examined across demographic variables using chi-square with significance set at $p \leq 0.05$.

RESULTS

The mean age of 127 patients was 28.52±8.89 years. The average gestational age was 39.30±1.77 weeks, and the mean parity was 2.86±1.38. The monthly income of the patients was 31726.95±13632.65 rupees.

Table 1 presents the demographics of the patients.

Regarding the fetomaternal outcomes, eclampsia was observed in 18 (14.2%) cases, while HELLP syndrome was observed in 5 (3.9%) cases. Placental abruption was reported in 9 (7.1%) cases, and fetal growth restriction affected 21 (16.5%) pregnancies. Preterm birth occurred in 20 (15.7%) cases, and fetal hypoxia was observed in 8 (6.3%) cases. Perinatal death was noted in 5 (3.9%) cases, and maternal mortality was recorded in 6 (4.7%) cases (Table 2). Stratifications of fetomaternal outcomes with various demographic factors can be seen in Tables 3 to 9.

Table 1: Demographics

Demographics		n	%
Socioeconomic status	Poor (< 20K Rs/Month)	45	35.4%
	Middle (20 to 50K Rs/Month)	71	55.9%
	Rich (> 50K Rs/Month)	11	8.7%
Education status	Uneducated	53	41.7%
	Primary	40	31.5%
	Higher	34	26.8%
Residential status	Rural	71	55.9%
	Urban	56	44.1%

Table 2: Fetomaternal outcomes

Fetomaternal outcomes		n	%
Eclampsia	Yes	18	14.2%
	No	109	85.8%
HELLP syndrome	Yes	5	3.9%
	No	122	96.1%
Placental abruption	Yes	9	7.1%
	No	118	92.9%
Fetal growth restriction	Yes	21	16.5%
	No	106	83.5%
Preterm birth	Yes	20	15.7%
	No	107	84.3%
Fetal hypoxia	Yes	8	6.3%
	No	119	93.7%
Perinatal death	Yes	5	3.9%
	No	122	96.1%
Maternal mortality	Yes	6	4.7%
	No	121	95.3%

Table 3: Stratification of fetomaternal outcomes with age

		Age distribution (Years)						P value
		15 to 25		26 to 35		36 to 45		
		n	%	n	%	n	%	
Eclampsia	Yes	10	55.6%	6	33.3%	2	11.1%	0.25
	No	42	38.5%	37	33.9%	30	27.5%	
HELLP syndrome	Yes	2	40.0%	1	20.0%	2	40.0%	0.68
	No	50	41.0%	42	34.4%	30	24.6%	
Placental abruption	Yes	4	44.4%	3	33.3%	2	22.2%	0.96
	No	48	40.7%	40	33.9%	30	25.4%	
Fetal growth restriction	Yes	7	33.3%	10	47.6%	4	19.0%	0.34
	No	45	42.5%	33	31.1%	28	26.4%	
Preterm birth	Yes	9	45.0%	5	25.0%	6	30.0%	0.65
	No	43	40.2%	38	35.5%	26	24.3%	
Fetal hypoxia	Yes	6	75.0%	1	12.5%	1	12.5%	0.12
	No	46	38.7%	42	35.3%	31	26.1%	
Perinatal death	Yes	3	60.0%	0	0.0%	2	40.0%	0.26
	No	49	40.2%	43	35.2%	30	24.6%	
Maternal mortality	Yes	0	0.0%	5	83.3%	1	16.7%	0.02
	No	52	43.0%	38	31.4%	31	25.6%	

Table 4: Stratification of fetomaternal outcomes with gestational age

		Gestational age (Weeks)				P value
		36 to 39		> 39		
		n	%	n	%	
Eclampsia	Yes	9	50.0%	9	50.0%	0.58
	No	62	56.9%	47	43.1%	
HELLP syndrome	Yes	0	0.0%	5	100.0%	0.10
	No	71	58.2%	51	41.8%	

[Citation: Saleem, M., Jabin, M. (2025). Fetomaternal outcome in obese pregnant women with pregnancy induced hypertension visiting Liaqat memorial hospital Kohat. *Pak. J. Inten. Care Med. 5(2), **2025**: 111*. doi: https://doi.org/10.54112/pjicm.v5i02.111]

Placental abruption	Yes	5	55.6%	4	44.4%	0.98
	No	66	55.9%	52	44.1%	
Fetal growth restriction	Yes	12	57.1%	9	42.9%	0.90
	No	59	55.7%	47	44.3%	
Preterm birth	Yes	20	100.0%	0	0.0%	0.0001
	No	51	47.7%	56	52.3%	
Fetal hypoxia	Yes	2	25.0%	6	75.0%	0.06
	No	69	58.0%	50	42.0%	
Perinatal death	Yes	3	60.0%	2	40.0%	0.85
	No	68	55.7%	54	44.3%	
Maternal mortality	Yes	4	66.7%	2	33.3%	0.58
	No	67	55.4%	54	44.6%	

Table 5: Stratification of fetomaternal outcomes with parity

		Parity				**P value**
		1 to 3		**> 3**		
		n	%	n	%	
Eclampsia	Yes	15	83.3%	3	16.7%	0.07
	No	67	61.5%	42	38.5%	
HELLP syndrome	Yes	3	60.0%	2	40.0%	0.82
	No	79	64.8%	43	35.2%	
Placental abruption	Yes	5	55.6%	4	44.4%	0.55
	No	77	65.3%	41	34.7%	
Fetal growth restriction	Yes	13	61.9%	8	38.1%	0.78
	No	69	65.1%	37	34.9%	
Preterm birth	Yes	11	55.0%	9	45.0%	0.33
	No	71	66.4%	36	33.6%	
Fetal hypoxia	Yes	7	87.5%	1	12.5%	0.16
	No	75	63.0%	44	37.0%	
Perinatal death	Yes	3	60.0%	2	40.0%	0.82
	No	79	64.8%	43	35.2%	
Maternal mortality	Yes	4	66.7%	2	33.3%	0.91
	No	78	64.5%	43	35.5%	

Table 6: Stratification of fetomaternal outcomes with BMI

		BMI (Kg/m2)				**P value**
		30 to 32		**> 32**		
		n	%	n	%	
Eclampsia	Yes	15	83.3%	3	16.7%	0.09
	No	69	63.3%	40	36.7%	
HELLP syndrome	Yes	2	40.0%	3	60.0%	0.20
	No	82	67.2%	40	32.8%	
Placental abruption	Yes	9	100.0%	0	0.0%	0.02
	No	75	63.6%	43	36.4%	
Fetal growth restriction	Yes	15	71.4%	6	28.6%	0.57
	No	69	65.1%	37	34.9%	
Preterm birth	Yes	15	75.0%	5	25.0%	0.36
	No	69	64.5%	38	35.5%	
Fetal hypoxia	Yes	4	50.0%	4	50.0%	0.31
	No	80	67.2%	39	32.8%	
Perinatal death	Yes	3	60.0%	2	40.0%	0.76
	No	81	66.4%	41	33.6%	
Maternal mortality	Yes	5	83.3%	1	16.7%	0.36
	No	79	65.3%	42	34.7%	

Table 7: Stratification of fetomaternal outcomes with socioeconomic status

		Socioeconomic status						**P value**
		Poor (< 20K Rs/Month)		**Middle (20 to 50K Rs/Month)**		**Rich (> 50K Rs/Month)**		
		n	%	n	%	n	%	
Eclampsia	Yes	10	55.6%	8	44.4%	0	0.0%	0.09
	No	35	32.1%	63	57.8%	11	10.1%	
HELLP syndrome	Yes	1	20.0%	3	60.0%	1	20.0%	0.56
	No	44	36.1%	68	55.7%	10	8.2%	

[Citation: Saleem, M., Jabin, M. (2025). Fetomaternal outcome in obese pregnant women with pregnancy induced hypertension visiting Liaqat memorial hospital Kohat. *Pak. J. Inten. Care Med. 5(2), **2025**: 111*. doi: https://doi.org/10.54112/pjicm.v5i02.111]

Placental abruption	Yes	5	55.6%	3	33.3%	1	11.1%	0.35
	No	40	33.9%	68	57.6%	10	8.5%	
Fetal growth restriction	Yes	8	38.1%	11	52.4%	2	9.5%	0.93
	No	37	34.9%	60	56.6%	9	8.5%	
Preterm birth	Yes	10	50.0%	8	40.0%	2	10.0%	0.28
	No	35	32.7%	63	58.9%	9	8.4%	
Fetal hypoxia	Yes	3	37.5%	3	37.5%	2	25.0%	0.20
	No	42	35.3%	68	57.1%	9	7.6%	
Perinatal death	Yes	2	40.0%	3	60.0%	0	0.0%	0.78
	No	43	35.2%	68	55.7%	11	9.0%	
Maternal mortality	Yes	4	66.7%	2	33.3%	0	0.0%	0.24
	No	41	33.9%	69	57.0%	11	9.1%	

Table 8: Stratification of fetomaternal outcomes with education status

		Education status						P value
		Uneducated		Primary		Higher		
		n	%	n	%	n	%	
Eclampsia	Yes	11	61.1%	3	16.7%	4	22.2%	0.17
	No	42	38.5%	37	33.9%	30	27.5%	
HELLP syndrome	Yes	1	20.0%	4	80.0%	0	0.0%	0.05
	No	52	42.6%	36	29.5%	34	27.9%	
Placental abruption	Yes	4	44.4%	2	22.2%	3	33.3%	0.80
	No	49	41.5%	38	32.2%	31	26.3%	
Fetal growth restriction	Yes	9	42.9%	8	38.1%	4	19.0%	0.63
	No	44	41.5%	32	30.2%	30	28.3%	
Preterm birth	Yes	7	35.0%	7	35.0%	6	30.0%	0.80
	No	46	43.0%	33	30.8%	28	26.2%	
Fetal hypoxia	Yes	2	25.0%	4	50.0%	2	25.0%	0.47
	No	51	42.9%	36	30.3%	32	26.9%	
Perinatal death	Yes	2	40.0%	1	20.0%	2	40.0%	0.75
	No	51	41.8%	39	32.0%	32	26.2%	
Maternal mortality	Yes	3	50.0%	2	33.3%	1	16.7%	0.83
	No	50	41.3%	38	31.4%	33	27.3%	

Table 9: Stratification of fetomaternal outcomes with residential status

		Residential status				P value
		Rural		Urban		
		n	%	n	%	
Eclampsia	Yes	10	55.6%	8	44.4%	0.97
	No	61	56.0%	48	44.0%	
HELLP syndrome	Yes	1	20.0%	4	80.0%	0.09
	No	70	57.4%	52	42.6%	
Placental abruption	Yes	6	66.7%	3	33.3%	0.50
	No	65	55.1%	53	44.9%	
Fetal growth restriction	Yes	12	57.1%	9	42.9%	0.90
	No	59	55.7%	47	44.3%	
Preterm birth	Yes	12	60.0%	8	40.0%	0.68
	No	59	55.1%	48	44.9%	
Fetal hypoxia	Yes	5	62.5%	3	37.5%	0.69
	No	66	55.5%	53	44.5%	
Perinatal death	Yes	3	60.0%	2	40.0%	0.85
	No	68	55.7%	54	44.3%	
Maternal mortality	Yes	6	100.0%	0	0.0%	0.02
	No	65	53.7%	56	46.3%	

DISCUSSION

The mean age of patients in this study was 28.52±8.89 years, which aligns closely with the demographic profiles reported by Akram et al. and Rahman et al., where mean ages were 26.15±3.22 and 28.73±6.52 years, respectively (14, 15). This suggests that the reproductive-age women studied across these settings share comparable age distributions, reinforcing the generalizability of findings to similar populations. The incidence of eclampsia was found in 14.2% of patients. This figure is higher than the 7.2% reported by Hamid et al (16). However, our figure is lower than the 21.8% documented by Rahman et al. in obese women (15). The prevalence of HELLP syndrome in our study was 3.9% which is consistent with the 4.1% reported by Hamid et al.[16] Both studies underscore the severe maternal morbidity associated with hypertensive disorders in pregnancy, particularly in obese women.

[Citation: Saleem, M., Jabin, M. (2025). Fetomaternal outcome in obese pregnant women with pregnancy induced hypertension visiting Liaqat memorial hospital Kohat. *Pak. J. Inten. Care Med. 5(2), **2025**: 111*. doi: https://doi.org/10.54112/pjicm.v5i02.111]

Placental abruption occurred in 7.1% of cases in this study, a figure that falls within the range reported by Hamid et al., 8.3% (16). Placental abruption is a common maternal morbidity in patients with PIH (14).

Fetal growth restriction (FGR) was observed in 16.5% patients, which is higher than the 12.6% reported by Hamid et al. (16). Akram et al. in their study noted 25-30% cases of FGR in women with severe PIH and obesity (14). This discrepancy may be attributed to variations in the severity of hypertension or obesity across studies.

Preterm birth occurred in 15.7% of cases, closely mirroring the 16.4% reported by Hamid et al. (2024) and the 37% noted by Ahmad et al. in overweight women (16, 17). The lower preterm birth rate in our study compared to Ahmad et al. may reflect differences in BMI classifications, as Ahmad et al. studied overweight (BMI 25-29.9) rather than obese (BMI ≥30) women. This suggests that while obesity increases preterm birth risk, the effect may be more pronounced in overweight women, possibly due to metabolic or inflammatory pathways that differ across BMI categories.

Fetal hypoxia was documented in 6.3% of cases, which is lower than 8.4% reported by Hamid et al (16). This difference could be due to variations in neonatal monitoring protocols or the severity of maternal hypertension.

Perinatal mortality in this study was 3.9% aligning with the 5.2% documented by Hamid et al (3). However, our perinatal mortality was lower than the 11.1-13% observed by Akram et al. in severe PIH and obese women (14). The higher mortality in Akram et al. may reflect the inclusion of more severe cases, emphasizing the critical role of hypertension severity in perinatal outcomes. Maternal mortality was 4.7% in our study, which is comparable to 3.1% reported by Hamid et al (16).

The findings of this study, when viewed alongside existing literature, highlight several actionable insights. First, the high rates of eclampsia and HELLP syndrome suggest a need for enhanced prenatal monitoring of obese women with PIH, particularly in low-resource settings where these conditions are often misdiagnosed. Second, the variability in FGR and preterm birth rates across studies underscores the importance of standardized diagnostic criteria to facilitate cross-study comparisons. Third, the lack of data on placental abruption and fetal hypoxia in most studies indicates a need for more comprehensive outcome reporting in future research.

CONCLUSION

In conclusion, the frequently occurring fetal outcomes in our study were fetal growth restriction, which was followed by preterm birth. In maternal outcomes, the frequently observed factors were eclampsia, followed by placental abruption. These are common factors associated with obese pregnant women with PIH.

DECLARATIONS

Data Availability Statement

All data generated or analysed during the study are included in the manuscript.

Ethics approval and consent to participate

Approved by the department Concerned. (IRB-KIMS-REC/ECC/23/17)

Consent for publication

Approved

Funding

Not applicable

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTION

MARIA SALEEM (Trainee Medical Officer)

Data Collection, Data Entry, Data Analysis,Review of manuscript, Manuscript Drafting, Manuscript Revisions,and Critical Input.

MUSARAT JABIN (Professor)

Study Design, Conception of Study, Critical Input, Final approval of manuscript.

REFERENCES

1. Fisher SC, Van Zutphen AR, Werler MM, Romitti PA, Cunniff C, Browne ML. National Birth Defects Prevention Study. Maternal antihypertensive medication use and selected congenital disabilities in the National Birth Defects Prevention Study. Birth Defects Res. 2018;110(19):1433-42. https://doi.org/10.1002/bdr2.1372
2. Spiro L, Scemons D. Management of Chronic and Gestational Hypertension of Pregnancy: A Guide for Primary Care Nurse Practitioners. Open Nurs J. 2018;12:180-3. https://doi.org/10.2174/1874434601812010180
3. Holm L, Stucke-Brander T, Wagner S, Sandager P, Schlütter J, Lindahl C, et al. Automated blood pressure self-measurement station compared to office blood pressure measurement for first-trimester screening of pre-eclampsia. Health Informatics J. 2019;25(4):1815-24. https://doi.org/10.1177/1460458218799505
4. DeCherney AH, Nathan L, Laufer N, Roman AS, Goodwin M, Nathan L, et al. Current diagnosis and treatment. Obstet Gynecol. 2013. https://www.skinbonescme.com/wp-content/uploads/2023/06/Melissa-Rodriguez-Birthing.Rodriguez-2.pdf
5. Prakash J, Pandey LK, Singh AK, Kar B. Hypertension in pregnancy: hospital-based study. J Assoc Physic India. 2006;54:273-8. https://europepmc.org/article/med/16944608
6. Teklu S, Gaym A. Prevalence and clinical correlates of the hypertensive disorders of pregnancy at Tikur Anbessa Hospital, Addis Ababa, Ethiopia. Ethiop Med J. 2006;44(1):17-26. https://europepmc.org/article/med/17447359
7. Osorio-Yañez, C., et al. "Associations of maternal urinary cadmium with trimester-specific blood pressure in pregnancy: role of dietary intake of micronutrients." Biological trace element research 174.1 (2016): 71-81. https://link.springer.com/article/10.1007/s12011-016-0705-4
8. Dolea C, AbouZahr C. Global burden of hypertensive disorders of pregnancy in the year 2000. GBD 2000 Working Paper, World Health Organization, Geneva. http://www. who. int/evidence/bod.. 2003b."Global Burden of Obstructed Labor in the Year 2000." GBD 2000 Working Paper, World Health Organization, Geneva. http://www. who. Int/evidence/bod; 2003.
9. Parveen N, Haider G, Shaikh IA, Ujjan ID. Presentation of predisposing factors of pregnancy-induced hypertension at Isra University Hospital, Hyderabad. Jlumhs. 2009;8(03):242. https://mail.lumhs.edu.pk/jlumhs/Vol08No03/pdfs/v8n3oa12.pdf
10. Moodley J. Maternal Deaths Associated with Hypertensive Disorders of Pregnancy: a Population-Based Study. Hypertens Pregnan. 2004;23(3):247-56. https://doi.org/10.1081/PRG-200030301
11. Lewandowska M, Więckowska B, Sajdak S. Pre-pregnancy obesity, excessive gestational weight gain, and the risk of pregnancy-induced hypertension and gestational diabetes mellitus. J Clin Med. 2020;9(6):1980. https://doi.org/10.3390/jcm9061980
12. Lewandowska M, Więckowska B, Sajdak S, Lubiński J. Pre-pregnancy obesity vs. other risk factors in probability models of

preeclampsia and gestational hypertension. Nutrients. 2020;12(9):2681. https://doi.org/10.3390/nu12092681
13. Simko M, Totka A, Vondrova D, Samohyl M, Jurkovicova J, Trnka M, et al. Maternal body mass index and gestational weight gain and their association with pregnancy complications and perinatal conditions. Int J Environ Res Public Health. 2019;16(10):1751. https://doi.org/10.3390/ijerph16101751
14. Akram U, Khattak SN, Kalsoom O, Anwar A, Munir TA. Impact and comparison of pregnancy-induced hypertension and obesity on fetal and maternal outcomes. Pak Armmed Forces Med J. 2019;69(4):1309-14. https://www.nature.com/articles/s41598-017-11432-5
15. Rahman S, Shabbir S, Moon A, Abbasi TR, Altaf K, Bunyad M. To study the fetomaternal outcomes of pregnancy with obesity: a retrospective case-control study. Liaquat Natl J Prim Care. 2024;6(3):213-9.
16. Hamid BS, Zuhra H, Jabeen M, Rauf I, Khan F, Saleem M. Adverse Fetomaternal Outcomes in Obese Pregnant Women with Gestational Hypertension. MedERA-Journal of CMH LMC and IOD. 2024;6(2).
17. Ahmad A, Ahmad S, Afridi H, Afridi IU, Waheed I. Fetomaternal outcome in pregnant females having overweight body mass index during the last trimester. Rawal Med J. 2025;50(2):381-383. https://www.rmj.org.pk/fulltext/27-1747501315.pdf?

[Citation: Saleem, M., Jabin, M. (2025). Fetomaternal outcome in obese pregnant women with pregnancy induced hypertension visiting Liaqat memorial hospital Kohat. *Pak. J. Inten. Care Med. 5(2), **2025**: 111*. doi: https://doi.org/10.54112/pjicm.v5i02.111]