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Original Research Article

## Medical disorders in pregnancy and pregnancy outcome: a retrospective analysis

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### ABSTRACT

**Background:** Medical disorders, including hypertensive diseases, diabetes, thyroid disorders may exist prior to pregnancy or may manifest themselves for the first time during pregnancy.

**Methods:** This retrospective study was conducted at the Department of Obstetrics and Gynecology of tertiary care hospital by reviewing all medical records of pregnant patients with medical disorders admitted for delivery from January 2016 to December 2016. Data collected was analysed using simple statistical measures like percentage and proportion.

**Results:** Most common medical disorder was pregnancy induced hypertension and its complication seen in 43% of the females; followed by anaemia and hypothyroidism seen in 20% females respectively. Maximum perinatal morbidity was seen in females suffering with hypertensive disorders (53.4%), with 17(41.8%) IUGR and 6 (11.6%) intra uterine demise respectively. Following PIH, higher rate of perinatal morbidity was seen in anaemic females (50% IUGR).

**Conclusions:** A detailed history taking and evaluation of all pregnant females at the first visit, regular antenatal follow-ups, investigations will help us to detect the pre-existing medical disorders or the pregnancy associated medical disorders in time. If the condition is detected early, it is easy to treat with very little detrimental effects to the mother and foetus.

**Keywords:** Pregnancy, Perinatal morbidity, Retrospective study

### INTRODUCTION

Medical disorders, including hypertensive diseases, diabetes, thyroid disorders may exist prior to pregnancy or may manifest themselves for the first time during pregnancy (e.g. gestational diabetes, gestational hypertension). The outcome for a particular pregnancy will depend on the nature of the disease, the severity of the disease process at onset of pregnancy, gestational age at onset of disease, time of obstetrical and medical management and the quality of obstetric and medical management used.

Management of pregnancies with pre-existing medical disorders should begin before conception. These women should be evaluated to determine the severity of the disorder and to establish or to rule out the presence of possible target organ damage. In addition, they should be counselled regarding the potential adverse effects of the disease on pregnancy outcome and the effects of pregnancy on their disease. These women should be instructed regarding the importance of early beginning of prenatal care and compliance with frequent prenatal visits.

All pregnant females should have a regular antenatal check-ups and investigations so that various medical disorders can be detected early in time and can be managed effectively. Hypertensive disorders in pregnancy (HDP) remain a major global health issue not only because of the associated high adverse maternal outcomes but there is a close accompaniment of significant perinatal morbidity and mortality.<sup>1,2</sup> A high risk pregnancy may be identified by using a scoring system such as the system developed by Hobel et al.<sup>3</sup> Risk scoring system may be defined as a formalized method of recognizing, documenting and cumulating antepartum, intrapartum and neonatal risk factors in order to predict complications for the fetus and new born.

Objectives of this study were

- To study the demographic details of patients with medical disorders in pregnancy.
- To study the spectrum of different complications in pregnancy due to the medical disorders
- To study the effect of comorbidities of advance maternal age on pregnancy
- To study the foetal outcome in medical disorders in terms of time of delivery, weight at birth, need of NICU admission

## METHODS

This retrospective study was conducted at the Department of Obstetrics and Gynaecology of tertiary care hospital by reviewing all medical records of pregnant patients with medical disorders admitted for delivery from January 2016 to December 2016. All data was retrieved and entered in preformed, structured, validated proforma regarding information of sociodemographic factors, high risk factors, and the antenatal, intranatal and postnatal events during this pregnancy, neonatal outcome. Data collected was analysed using simple statistical measures like percentage and proportion.

### Inclusion criteria

- All females booked with our institute and diagnosed to have medical disorder preconceptionally or antenatally.

### Exclusion criteria

- Unbooked patients with medical complications
- Pre-existing medical conditions leading to abortion in first trimester.

## RESULTS

High risk pregnancy is multifactorial in most of the cases and so many high-risk patients had more than one directly or indirectly contributing high risk factors contributing to the antenatal or perinatal morbidity.

In the present study majority of the mothers were in the age group of 20-35 years (91%), while remaining 7% were in the age group of >35 years. 64% of females were from urban area and 35% were from rural area. (Table 1). 43 females were primigravida, 42 were multigravida and 14 females were grand multigravida. 65% females delivered after completing the term and 34% delivered pre-term out of which 5% delivered before completing 28 weeks of gestation. Among the five pregnancies which were terminated before 28 weeks of gestation 4 had pre-eclampsia and 1 had uncontrolled gestational diabetes mellitus.

**Table 1: Sociodemographic details.**

| Age in Years                   | No. of patients | Percentage |
|--------------------------------|-----------------|------------|
| <19                            | 1               | 1          |
| 20-35                          | 91              | 91         |
| >35                            | 7               | 7          |
| No. of pregnancy               |                 |            |
| Primigravida                   | 42              | 42         |
| Multigravida                   | 43              | 43         |
| Grandmulti                     | 14              | 14         |
| Period of gestation (in weeks) |                 |            |
| <28                            | 5               | 5          |
| 28-36                          | 29              | 29         |
| 37-40                          | 63              | 63         |
| >40                            | 2               | 2          |
| Residence                      |                 |            |
| Rural                          | 35              | 35         |
| Urban                          | 64              | 64         |

**Table 2: Medical disorders in pregnancy.**

| Type of medical disorder                            | No. of patients | Percentage |
|---|-----------------|------------|
| Pregnancy induced hypertension and its complication | 43              | 43.4       |
| Gestational diabetes mellitus                       | 5               | 5.01       |
| Bronchial asthma                                    | 3               | 3.03       |
| Epilepsy  | 2               | 2.02       |
| Hypothyroid   | 20              | 20.2       |
| Cardiac disease                                     | 6               | 6.06       |
| Anaemia   | 20              | 20.2       |
| Rh negative   | 8               | 8.08       |

Most common medical disorder was pregnancy induced hypertension and its complication like pre-eclampsia, eclampsia, seen in 43% of the females; followed by anaemia and hypothyroidism seen in 20% females respectively.

Out of the 43 females suffering from PIH, 4 females had eclampsia and 7 females had severe pre-eclampsia for which they were managed medically and by terminating the pregnancy. 12 out of 20 anaemic females required blood transfusion before delivery. Others were treated with parenteral iron post-delivery.

**Table 3: Outcome of pregnancy.**

| Outcome of pregnancy      | No. of patients | Percentage |
|---------------------------|-----------------|------------|
| IUGR                      | 40              | 40         |
| Macrosomia                | 7               | 7          |
| IUFD/Still birth/Abortion | 7               | 7          |
| Normal for gest           | 53              | 53         |

Hypothyroidism was diagnosed during routine antenatal investigations (serum TSH in first trimester) and was treated symptomatically with thyroxin as per the recommendations. We had 8 females with twin pregnancies out of these 5 females develop severe

preeclampsia 2 had moderate anaemia and 1 had hypothyroidism.

On analysis of outcome of pregnancy in relation to various medical disorders it was seen that maximum perinatal morbidity was seen in females suffering with hypertensive disorders (53.4%), with 17 (41.8%) IUGR and 6 (11.6%) intra uterine demise respectively. Following PIH, higher rate of perinatal morbidity was seen in anaemic (50% IUGR) and hypothyroid (35% IUGR) females. Details of outcome of pregnancy in relation to the medical disorders is summarised in Table 4.

**Table 4: Outcome of pregnancy in relation to medical disorders.**

| Type of Medical Disorder      | Macrosomia | Normal for gestation | IUGR      | IUD/ SB/Abortion |
|-------------------------------|------------|----------------------|-----------|------------------|
| Hypertensive disorder         | -          | 20(46%)              | 17(41.8%) | 6(11.6%)         |
| Hypothyroid                   | -          | 12(60%)              | 8(35%)    | -                |
| Anaemia                       | -          | 10(50%)              | 10(50%)   | -                |
| Cardiac disease               | -          | 4(66.67%)            | 2(33.33%) | -                |
| Gestational diabetes mellitus | 3(60%)     | -                    | 1(20%)    | 1(20%)           |
| Bronchial asthma              | 1(33.3%)   | 1(33.3%)             | 1(33.3%)  | -                |
| Epilepsy                      | 1(50%)     | 1(50%)               | -         | -                |
| Rh negative                   | 2(25%)     | 5(62.5%)             | 1(12.5%)  | -                |

## DISCUSSION

Preeclampsia leads to increased perinatal morbidity and mortality due to associated IUGR and fetal hypoxia. Mendez L et al found that abnormal RI of umbilica Any medical disorder in pregnancy presents a significant risk to foetal well-being, such as premature birth, small for date infant or still births and early neonatal death. Identification of patients at risk for these complicated pregnancies with poor outcome is fundamental to antenatal care. It is seen that these conditions are multifactorial and a female may suffer from more than one medical disorders resulting in high risk pregnancy and poor outcome of it.

In Our study the majority of the mothers were in the age group of 20-35 years (91%). In a study done for high risk scoring system for prediction of pregnancy outcome previously at author's institute also showed that maximum high risk pregnancies are seen in 19-35 years of age (95%).<sup>4</sup>

Numerous studies have been conducted to see the perinatal outcome in patients with hypertensive disorders, hypothyroidism, anaemia and gestational diabetes mellitus respectively. Zareen N et al have conducted a study where they have compared the high risk pregnancies with low risk pregnancies.<sup>5</sup> Anaemia 98

(60.49%), pregnancy induced hypertension 24 (14.8%) were identified as the major risk factors.<sup>5</sup> In the present study most common medical disorder was pregnancy induced hypertension and its complication like preeclampsia, eclampsia, seen in 43% of the females.

Hypertensive disorders in pregnancy are associated with significant perinatal morbidity and mortality especially in the developing world. In a study conducted by Kwame Adu-Bonsaffoh et al, the major adverse perinatal outcomes determined among women with HDP include intrauterine growth restriction (6.3%), intrauterine fetal death (6.8%), preterm delivery (21.7%), low birth weight (24.7%) and birth asphyxia or neonatal respiratory distress (15.2%) among other complications.<sup>6</sup>

There were 12 (7.40%) stillbirths and 5 (3.08%) early neonatal deaths in high risk group, while there was 1 (0.84%) stillbirth and no neonatal death in low risk group ( $p=0.004$ ,  $RR=1.72$ ).<sup>2</sup> There were 58 (35.80%) neonates with low birth weight in high risk group, while the same were only 4 (3.33%) in low risk group.<sup>5</sup> It was observed that perinatal mortality was twice as high in high risk group compared to low risk group. In our study perinatal morbidity was seen in females suffering with hypertensive disorders (53.4%), with 17(41.8%) IUGR and 6 (11.6%) intra uterine demise respectively.

The other major medical disorder seen in the developing countries is anaemia. Among pregnant women anaemia prevalence of 58%-89.6% has been documented in the country.<sup>7-9</sup> The risk of prematurity and LBW is higher in anaemic women. Lone FW conducted a study to see the effect of anaemia on pregnancy outcome.<sup>10</sup> It was observed that the risk of preterm delivery and LBW among exposed group was 4 and 1.9 times higher among anaemic women, respectively. In present study about 50% of the babies delivered by anaemic mother were IUGR.

## CONCLUSION

Medical disorders in pregnancy are multifactorial and presents with great potential to adversely affect maternal and foetal outcomes. If the condition is detected early, it is easy to treat with very little detrimental effects to the mother and foetus. Hence, these conditions need early detection, prompt initiation of treatment, regular follow-up. Most importantly sufficient education of the patients regarding the awareness of the danger signs and their seeking of medical facilities in time will improve the maternal and foetal outcome.

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