

Original Research Article

# A Prospective Study of Maternal and Perinatal Outcome in Antenatal Patients with Respiratory Disorders

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## Abstract

**Background & Methods:** The aim of the study is to study maternal and perinatal outcome in antenatal patients with respiratory disorders. All participants were provided with a study information sheet and were allowed to ask questions about the study and their participation. Written informed consent was then obtained. Demographic details, obstetric history, examination findings, and investigation results of women enrolled were recorded.

**Results:** On analyzing the impact of respiratory disorder on the outcome of foetus it was found that majority 22 (36.6%) of the babies were preterm low birth weight, 17 (28.3%) babies were term low birth weight, with the mean birth weight of  $2.13 \pm 0.51$ , followed by FGR among 17 (28.3%), and 4 (6.67%) were IUD.

**Conclusion:** Chronic respiratory illnesses in pregnancy pose more risks to the mother and foetus, as seen by the higher chance of IUD, NICU admissions, preeclampsia, IUGR, Spontaneous abortion, etc. Mothers with respiratory illnesses should be screened antenatally as the chances of LSCS are higher, and they cannot withstand the stress of a normal delivery. Close monitoring of the antenatal period with pulmonary function testing increases the chance of a good outcome of the present pregnancy and reduce fetomaternal mortality.

**Keywords:** pregnancy, perinatal, respiratory & disorders.

**Study Design:** Observational Study.

## 1. Introduction

All women during pregnancy undergo specific anatomical and physiological changes. The alteration helps to prepare the women for childbirth and to meet the metabolic needs required for the appropriate development of the foetus.(1)

The change occurs in every system; it begins soon after conception, peaks during labour at term, and resolves after delivery with mild residual effects. Despite pregnancy being a normal phenomenon, certain changes might be fatal. It is essential to understand the normal physiological changes that occur during pregnancy to differentiate the abnormal changes.

Healthy females can tolerate these changes; certain pre-existing mild illnesses might get aggravated during the physiological changes during pregnancy.(2)

A comprehensive understanding of the physiological changes is the key to successful obstetric management during pregnancy. (3)

Tuberculosis (TB) is one of the most important infectious causes of maternal mortality globally and accounts for 16% of all maternal deaths. The WHO Tuberculosis Report for

2014 states that in 2013 there were an estimated 3.3 million cases among women, with 510,000 deaths. One-third of these women were co-infected with HIV. (4)

A review of the available data suggested that the prevalence of active TB among pregnant women ranges from 0.06% to 0.25% in low-burden countries.

In high-burden countries, rates of between 0.07% and 0.5% were found among HIV-negative women and between 0.7% and 11% among HIV-positive women.

India contributes to nearly 21% of the global burden of TB among pregnant women, and the estimated prevalence of TB stands at 2.3 per 1000 pregnant women, which translates to about 44,500 patients annually. (5)

Respiratory disease is the third highest cause of mortality in the world's female population in middle-income countries, with tuberculosis among the top five causes of death among women of reproductive age in developing countries; during pregnancy, women are exposed to nasal congestion, hyperventilation, and the diaphragm moves up. These lead to changes in respiratory capacity for ventilation. (6)

## 2. Material and Methods

All participants were provided with a study information sheet and were allowed to ask questions about the study and their participation. Written informed consent was then obtained. Demographic details, obstetric history, examination findings, and investigation results of women enrolled were recorded. The patient's outcome was recorded in terms of mode of delivery, maternal and foetal outcome. All Pregnant women with respiratory problems visiting the department of Obstetrics and gynaecology, MGMMC, and M.Y. hospital.

### Inclusion criteria:

All pregnant women with,

1. Bronchial Asthma
2. Pleural effusion
3. Patients with other respiratory problems.

**Exclusion criteria:** COVID-19 patients

## 3. Result

**Table No: 01 Time of diagnosis of the study subjects**

TIME OF DIAGNOSIS	FREQUENCY	%
1 <sup>ST</sup> TRIMESTER	1	1.67
2 <sup>ND</sup> TRIMESTER	3	5.00
3 <sup>RD</sup> TRIMESTER	55	91.67
POST PARTUM	1	1.67

Among the patients diagnosed with respiratory disorder, majority of the patients were diagnosed at the 3<sup>rd</sup> trimester 55 (91.67%) followed by detection at 2<sup>nd</sup> trimester and 1 (1.67%) detected in the 1<sup>st</sup> trimester and postpartum each.

**Table 2: Distribution of symptoms among the study subjects**

SYMPTOMS	FREQUENCY	%
DYSPNOEA	49	81.67

<b>B/L PEDAL EDEMA</b>	5	8.33
<b>HEADACHE</b>	3	5.00
<b>FEVER</b>	1	1.67

Majority of the patients with the respiratory disorder had complaints of dyspnoea, followed by bilateral pedal oedema among 5 (8.33%), 3(5%) had complaints of head ache and 1 (1.67%) had fever.

**Table 3: Distribution of foetal outcome among study subjects**

<b>FOETAL OUTCOME</b>		<b>FREQUENCY</b>	<b>%</b>
FGR		17	28.3
LBW	PRETERM	22	36.6
	TERM	17	28.3
IUD		4	6.67
MEAN BIRTH WEIGHT		2.13±0.51	
MEAN APGAR SCORE		6.41±0.71	

On analyzing the impact of respiratory disorder on the outcome of foetus it was found that majority 22 ( 36.6%) of the babies were preterm low birth weight , 17 (28.3%) babies were term low birth weight ,with the mean birth weight of 2.13±0.51, followed by FGR among 17 (28.3%) , and 4 (6.67%) were IUD.

#### **4. Discussion**

Didier KA et al. (7) majority of the women were diagnosed with a respiratory disorder in the third trimester (50.80%) followed by the third trimester (40.60%). Similarly, a study by Lakhdar I et al. (16) and Alonso AM et al. reported that most cases were diagnosed in the third trimester. This was in concurrence with our study where the majority were diagnosed in the 3rd trimester, 55 (91.67%), followed by detection in 2nd trimester and 1 (1.67%) detected in the 1st trimester and postpartum each. Didier KA et al. (7) reported Dyspnea (58%) is the most common complaint, followed by cough and chest pain. Which was similar to our study, where Dyspnea, was the most common complaint followed by bilateral pedal edema among 5 (8.33%), 3(5%) had complaints of headache, and 1 (1.67%) had a fever.

Shashikala Karanth et al., (8) in their study, reported majority were born with a birth weight of 2.5–3.5 kg. It was found that majority of the patients developed respiratory symptoms in the third trimester, with majority among multiparous.

It has reported that poor maternal fetal outcome is seen among women with respiratory pathology during pregnancy. Iloki et al., study in Brazzaville rightly found that the respiratory pathology as the second most common cause of death among women in the childbearing age group.

#### **5. Conclusion**

Chronic respiratory illnesses in pregnancy pose more risks to the mother and foetus, as seen by the higher chance of IUD, NICU admissions, preeclampsia, IUGR, Spontaneous abortion, etc. Mothers with respiratory illnesses should be screened antenatally as the chances of LSCS are higher, and they cannot withstand the stress of a normal delivery. Close monitoring of the

antenatal period with pulmonary function testing increases the chance of a good outcome of the present pregnancy and reduce feto- maternal mortality.

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