



## PREVALENCE AND RISK FACTORS OF ASTHMA AGGRAVATION, DURING ANTENATAL WOMEN

T.V. Siddhartha Reddy<sup>1\*</sup>, T. Mohanalakshmi<sup>2</sup>

<sup>1</sup>Associate Professor, Department of Community Medicine, Sree Balaji Medical College And Hospital, Chromepet, Chennai, Tamil Nadu 600044, India.

<sup>2</sup>Associate Professor, Department of Microbiology, Sri Lakshmi Narayana Institute of Medical Sciences, Puducherry, 605502, affiliated to Bharath Institute of Higher Education and Research, Chennai, Tamil Nadu 600126, India.

### Abstract

**Background:** Asthma is a common incident during pregnancy. Exacerbation during pregnancy constitutes for vital and challenging medical problem and may result in poor fetomaternal outcomes. Until now, there are no research comparing the fetomaternal outcomes in antenatal women with asthma. Exacerbation along with non-asthma antenatal women (control group) of parallel age and period of gestation. Therefore, the aim of the study Prevalence and risk factors of asthma aggravation, during antenatal women **Material & Methods:** This is a retrospective observational comparative study. During the study period, total number of deliveries was 700. Women who were admitted with the diagnosis of exacerbation of asthma during pregnancy between 1st Jan 2021 to 31st June were included in the study. These cases were compared with random selection of controls who were admitted in the same duration of time for the delivery without asthma after matching maternal age and period of gestation. Ethical clearance was obtained before the study. Fetomaternal outcomes were compared between women with exacerbation of asthma and non-asthma. **Results:** The prevalence of asthma during pregnancy was 6 % among the member. The majority of allergens in asthmatic group were pollen, stress, and climate. It was a significant relationship between age, education and place of living in asthmatic and non-asthmatic group. There was a considerable link involving asthma symptoms among the two groups ( $p = 0.001$ ). In addition, a significant relationship was found between asthma and other allergic diseases as well as eczema, allergy, rhinitis, and wheeze in asthmatic women, with a major relationship between wheeze and coughing and allergy. **Conclusion:** Exacerbation of asthma during antenatal women may affect in reduced fetomaternal outcome. Hence, additional investigate is required to appreciate the occurrence of asthma in pregnancy and its consequences.

**Keywords:** Asthma exacerbation, antenatal women, Fetomaternal outcomes.

### INTRODUCTION:

Asthma is the one of the most frequent chronic respiratory disorder complicating pregnancy. It is happening in 8–13% of antenatal women global[1]. Almost forty percent of pregnant women decrease or stop taking asthma drugs because of worries regarding the protection of asthma medicines [2, 3]. Uncontrolled asthma may possibly increase asthma severity and also the risk of getting asthma exacerbation during pregnancy [4]. Exacerbations are most likely to occur during the second

and third pregnancy trimesters with a peak at six months gestation [5]. There is increased risk of pre-eclampsia, gestational diabetes; placental abruption and placenta praevia in pregnant women with exacerbations of asthma. These women also have a higher risk for breech presentation, haemorrhage, pulmonary embolism, caesarean delivery, increased intensive care unit admission and longer hospital stay.

Moderate to severe chronic asthma may be associated with increased risk of intrauterine growth retardation, small-for-gestational age, low birth weight, neonatal hypoglycaemia and preterm birth and low APGAR score[6, 7]. As a result, asthma exacerbations are associated with poor fetomaternal outcomes during pregnancy.

Whereas controlled asthma only has a minor effect on the mother and fetus, the danger of uncontrolled asthma is important for both. Asthma triggers during pregnancy are a critical clinical problem and may be associated with adverse pregnancy outcomes[8,9]. Therefore, the objective of this study is to Prevalence, incidence, and risk factors of asthma aggravation, during antenatal women.

**MATERIAL METHODS:**

A retrospective observational comparative takes a look at was carried out in Sree Balaji Medical College And Hospital, Chromepet, Women who had been admitted with a diagnosis of exacerbation of asthma during pregnancy at some stage in the 12 months 1st Jan 2019 to thirty-first Dec have been included within the have a look at. These instances were in comparison with a random selection of controls who had been admitted inside the equal period for the shipping without bronchial asthma after matching maternal age and length of gestation. Institutional Ethical clearance was taken earlier than the records collection. Maternal results studied were duration of gestation on the time of exacerbation of bronchial asthma, mode of delivery, affiliation with preeclampsia and, urinary tract

contamination. Neonatal consequences measures had been duration of gestation on the time of transport, birth weight, APGAR score, and NICU admission. The accumulated information become entered in MS Office excel 2007 and later the document turned into converted into SPSS eleven.[5] version software program. Frequency and percent had been calculated for express facts and suggest ± SD become calculated for numeric information. Chisquare takes a look at and t-test has been used to find out the importance of the variables. Odds ratio with its self-assurance c program language period was calculated to find out the energy of affiliation. P-value less than 0.05 become considered as extensive at ninety-five percent confidence interval.

**RESULTS:**

Out of 700 pregnant women screened with the survey, 51 pregnant women were confirmed positive by this questionnaire forms, 2 patient was originating by cardiovascular disease, 5 women were identified to be having respiratory disorders other than asthma and also 2 patients had abortion in 9 weeks gestational age. 42 were clinically diagnosed with asthma. The frequency of asthma was derived as 6%. The maximum rate in the asthmatic patients’ group was in the age range of 35 years (≥ 35 category) - 29 (69.0%) subjects. There was important association between the number of pregnancy and delivery p = 0.01 and p = 0.006, respectively. In present study include allergenic factors in pregnant women.

**Table 1: Incidence of demographic characteristics of asthmatic and non-asthmatic pregnant Women**

Variables	Non asthmatic	Asthmatic
<b>Education</b>		
Under high school	356(54.8%)	37(88.0%)
Upper high school	293(45.1%)	5(11.9%)
<b>Age</b>		
Age < 35	459(70.7%)	29(69.0%)
Age > 35	190(29.2%)	13(30.9%)
<b>BMI</b>		
BMI < 25	639(98.4%)	39(92.8%)
BMI > 25	10(1.5%)	2(4.7%)
City	456(70.2%)	5(11.9%)
Village	193(41.1%)	37(88.0)
<b>Family History Of asthma</b>		
NO	633(97.5%)	33(78.5%)
YES	16(2.4%)	9(21.4%)

**Table 2: Regularity of symptoms in pregnant women**

Characteristics	Y/N	Non asthmatic	Asthmatic
		N%	N%
Cough	Yes	9(1.3%)	32(76.1%)
	No	640(98.6%)	10(23.8%)
Wheezing after excise	Yes	7(1.0%)	38(90.4%)
	No	642(98.9%)	4(9.5%)
Cough in cool weather	Yes	8(1.2%)	25(59.5%)
	no	641(98.7%)	17(40.4%)
Wheezing spatial place	Yes	23(3.5%)	31(73.8%)
	No	626(96.9%)	11(26.1%)
Perfume wheezing	Yes	9(1.3%)	29(69.0%)
	No	640(98.6%)	13(30.9%)
seasanol wheezing	Yes	8(1.2%)	31(73.8%)
	No	641(98.7%)	11(26.1%)
Allergy	Yes	391(60.2%)	2(4.7%)
	No	258(39.7%)	40(95.2%)

**Table 3: Control of asthma with reference to having allergy**

Asthma		Well controlled	Not well controlled	Poorly controlled
		N%	N%	N%
Allergy	NO	3(23.7%)	2(11.1%)	1(33.3%)
	Yes	10(76.9%)	16(88.8%)	2(66.6%)

Our present study in the non-asthmatic group had normal delivery 92.7% (649), and in the asthmatic the group cesarean section was more common 18 (42.8%). Chi-square test showed a statistically major distinction in terms of the delivery method in two groups ( $p = 0.02$ ) (Figure 1). Our study showed relationship among asthma in asthmatic women with other allergic diseases including eczema, allergy, rhinitis, and wheeze in Figure 2 showed a significant relationship involving wheeze and coughing and allergy (Table2). Severity of asthma according to allergen factors in asthmatic patient was not significant. There is no statistical association among control of asthma and the presence of allergy (Table 3).

**DISCUSSION:**

The outcomes showed that the frequency of asthma in pregnant women 6%. Which is correlated with the Karimi et al. recognized 5.6% of antenatal women as being asthmatic. Recent reports within the USA recommend that 3.7 - 8.4% of pregnant women<sup>10</sup>. A likely motive for difference in asthma prevalence is in bronchial asthma analysis and asthma manage that seem to vary

through population characteristics likely age, race, ethnicity, socio eco-nomic popularity and similarly research and scientific involvement are needed to deal with a probably systematic version in reporting and management of the disease[11]. In present study, Asthma aggravated about 23.7% of third trimester, while in one examine, amongst pregnant who finished the bronchial asthma manipulate take a look at for the duration of the medical interview, 50% of ladies skilled worsening of bronchial asthma at some stage in pregnancy, differences of asthma severity within the various trimesters of being pregnant, which might be because of the small sample length[12]. It is also recognized that lady with slight disease are nevertheless at risk of excessive exacerbations at some point of pregnancy, and for that reason, regular monitoring of allergies in the course of pregnancy is recommended [13]. Asthmatic women were confidential to the control level according to the GINA guidelines, which meant that 76.9% of subjects were well-controlled; 88.8% were not well controlled and 6.6% were poorly controlled. It is similar finding to the Meena’s study in India, in which there were 51.9%, 42.3%, and 5.8% of controlled,

uncontrolled, and partly controlled subjects, respectively [14]. In this regard, Brecken study is comparable to the present study [15]. In the Karimi's study in Yazd, 5.6% of women were referred to as asthmatics [16]. This distribution of incidence in different parts of the country can be because of climate diversity and life patterns like diet, sleep patterns, smoking,

About Firoozi et al., mothers with cruel asthma were in the upper level of BMI, although in our study, pregnant women with asthma were more likely to be in the middle class of BMI. Usually Most of the subjects with asthma were still living in the village, but in the Firozi's study, said that in the city. May be, the reason is the difference between urbanization and environmental pollution in the area where the study is performed. In adding together in the Firozi's findings preterm rate in the severe asthma group was more reported[17]. For a more correct evaluation of the burden of asthma within the future, populace-based studies with a standard procedure for the epidemiological revised of asthma, specifically in being pregnant, need to be designed to assess chance factors, the age at which the disease first regarded, the number of bronchial asthma healing, and also the disease's economic as well as social effects. About the lack of sufficient in order accessible in the health system of the

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country it is appropriate for health policymakers to reinforce the present care gadget on the way to become more aware about the disorder in pregnancy in country.

#### CONCLUSION:

In current study found that Maternal asthma is connected with severe complications in pregnancy and adverse perinatal outcomes. For that reason, more careful monitoring of women with exacerbation of asthma during the antenatal period and delivery is required. Hence, additional investigate is required to appreciate the occurrence of asthma in pregnancy and its consequences.

#### Conflicts Of Interest

The authors declared no conflict of interest.

#### Compliance With Ethics Requirements

This article does not contain any studies with human or animal subjects.

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