

Prevalence of asthma and respiratory symptoms during pregnancy: An observational study

¹Dr. ILA Agarwal, ²Dr. Shalini Nagpal, ³Dr. Abdul Wahab Mirza

¹Assistant Professor, Department of Obstetrics and Gynaecology, SCB Medical College, Cuttack, Odisha, India

²Assistant Professor, Department of Obstetrics & Gynaecology, Dr. S.S. Tantia Medical College, Hospital and Research Centre, Sriganaganagar, Rajasthan, India

³Associate Professor, Department of TB & Chest, Rama Medical College Hospital & Research Center, Kanpur, Uttar Pradesh, India

Corresponding Author:

Dr. Abdul Wahab Mirza

Associate Professor, Department of TB & Chest,
Rama Medical College Hospital & Research Center, Kanpur, Uttar Pradesh, India

Email: wahabmirza17@yahoo.in

Abstract

Background: Asthma attack is the most common respiratory symptom observed and is of great concern. Throughout the world asthma cases are increasing during pregnancy. The major issue is that the control levels of asthma is changing during pregnancy so the management is a little difficult during pregnancy.

Objective: The present study was undertaken to observe the prevalence of asthma and respiratory symptoms during pregnancy.

Materials and methods: 40 pregnant women attending OPD in the hospital were part of the study after obtaining the written informed consent. Confidentiality of the data was maintained. Willing pregnant women were included in the study. Pregnant women with any other complications severe were excluded from the study. Respiratory symptoms were examined during the general physical examination by an expert physician.

Results: The age group of the participants ranges from 22-30 years. 25% of individuals have asthma. 37.5% of individuals have wheeze without cold, 15% of individuals have nasal allergies. 27.5% have shortness of breath. 5% of individuals have a history of smoking. 15% of individuals are currently under the medication for asthma.

Conclusion: The present study results explained that wheezing without cold and shortness of breath are the most common respiratory symptoms during pregnancy. Further detailed studies with a higher sample size are recommended to understand better the respiratory symptoms during pregnancy.

Keywords: Pregnancy, asthma, respiratory problems

Introduction

Asthma attack is the most common respiratory symptom observed and is of great concern ^[1]. Throughout the world asthma cases are increasing during pregnancy ^[2]. The major issue is that the control levels of asthma is changing during pregnancy so the management is a little difficult during pregnancy ^[3]. Further, if the pregnant woman is already an asthma patient, there is a chance of the development of asthma attacks during the pregnancy period. This was observed in around one-third of pregnant women. Also, the severity of the disease also

increases during pregnancy [4]. Other than asthma there are also symptoms like shortness of breath, and wheezing without cold observed in these populations [5]. The most important issue is that if the pregnant woman is suffering from respiratory symptoms, the fetus will suffer from the complications like low birth weight, premature birth, etc. Hence, there is a strong need to give maximum importance to the respiratory symptoms during the pregnancy and diagnose the complications at the early stages for the benefit of both mother and the child. For this, there is a need for research evidence about the relation between respiratory problems in the pregnancy period. Hence, the present study was undertaken to observe the prevalence of asthma and respiratory symptoms during pregnancy.

Materials and methods

Study design

Observational study.

Study setting

The present study was conducted at.

Study participants

40 pregnant women attending OPD in the hospital were part of the study after obtaining the written informed consent. Confidentiality of the data was maintained. Willing pregnant women were included in the study. Pregnant women with any other complications severe were excluded from the study.

Outcome measures

Respiratory symptoms were examined during the general physical examination by an expert physician.

Ethical considerations

The study protocol was approved by the institutional human ethical committee. The confidentiality of data was maintained throughout the study.

Data analysis

Data was analyzed using SPSS 20.0. Data were represented as frequency and percentage.

Results

Data was presented in the table. The age group of the participants ranges from 22-30 years. 25% of individuals have asthma. 37.5% of individuals have wheeze without cold, 15% of individuals have nasal allergies. 27.5% have shortness of breath. 5% of individuals have a history of smoking. 15% of individuals are currently under the medication for asthma.

Table 1: Clinical parameters of the participants (N=40)

Parameter	Frequency and percentage
Asthma	10 (25%)
Wheezing without cold	15 (37.5%)
Nasal allergies	6 (15%)

Shortness of breath	11 (27.5%)
Current smoking	2 (5%)
Currently under asthma medication	6 (15%)

Data were expressed as frequency and percentage

Discussion

The present study was undertaken to observe the prevalence of asthma and respiratory symptoms during pregnancy. Data was presented in the table. The age group of the participants ranges from 22-30 years. 25% of individuals have asthma. 37.5% of individuals have wheeze without cold, 15% of individuals have nasal allergies. 27.5% have shortness of breath. 5% of individuals have a history of smoking. 15% of individuals are currently under the medication for asthma. The increase in the severity of asthma was explained by the changes during the pregnancy both physical changes in the uterus and changes in the levels of hormones. As there is an enlargement of the uterus the diaphragm which is the principal muscle of inspiration is elevated. The movement of the diaphragm is restricted. As it is well known that nearly seventy percent of air entry to the lungs is by the contribution of the diaphragm, the restriction of the diaphragm leads to a decrease in the volumes of the lungs [6]. Further, there is a gain in the weight during the pregnancy. This causes a change in the neck circumference due to the accumulation of fat [7]. This leads to difficulty in taking a breath and leads to shortness of breath also. There is a drastic change in the metabolism of pregnant women and to compensate for this there is an alteration in the hormonal levels like cortisol, prostaglandins, estrogen, and other hormones related to pregnancy. The role of progesterone in respiratory dynamics is well known [8]. Estrogen also equally affects the respiratory parameters [9, 10]. The present study results are in accordance with earlier studies as we have observed notable respiratory symptoms during the pregnancy.

Conclusion

The present study results explained that wheezing without cold and shortness of breath are the most common respiratory symptoms during pregnancy. Further detailed studies with a higher sample size are recommended to understand better the respiratory symptoms during pregnancy.

Conflicts of interest: None declared.

Source of funding: Self-funding.

References

1. Kwon HL, Belanger K, Bracken MB. Asthma prevalence among pregnant and childbearing-aged women in the United States: Estimates from national health surveys, *Annals of Epidemiology*. 2003;13(5):317-324.
2. Kwon HL, Belanger K, Bracken MB, Asthma prevalence among pregnant and childbearing-aged women in the United States: estimates from national health surveys, *Annals of Epidemiology*. 2003;13(5):317-324.
3. Ibrahim WH, Rasul F, Ahmad M, *et al.*, Asthma knowledge, care, and outcome during pregnancy: the QAKCOP study, *Chronic Respiratory Disease*, 2018, 16.
4. Bobrowski RA. Pulmonary physiology in pregnancy,” *Clinical Obstetrics and Gynecology*. 2010;53(2):285-300.
5. Tan EK, Tan EL. Alterations in physiology and anatomy during pregnancy, *Best Practice and Research Clinical Obstetrics and Gynaecology*. 2013;27(6):791-802.

6. Annamraju H, Mackillop L. Respiratory disease in pregnancy, *Obstetrics, Gynaecology and Reproductive Medicine*. 2017;27(4):105-111.
7. Kourtis P, Read JS, Jamieson DJ. Pregnancy and infection, *New England Journal of Medicine*. 2014;370(23):2211-2218.
8. Clifton V. Maternal asthma during pregnancy and fetal outcomes: potential mechanisms and possible solutions, *Current Opinion in Allergy and Clinical Immunology*. 2006;6(5):307-311.