

Pregnancy Induced Rhinitis

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Objective of this prospective study was to evaluate the occurrence of nasal congestion during pregnancy. Nasal congestion during pregnancy in 54 patients was evaluated at 12, 20, 28 & 36 weeks and was correlated to age, parity & body mass index. Results were recorded on the basis of subjective experience of patients. The prevalence of nasal congestion increased during pregnancy and occurred in 16% of women at 12 weeks of gestation, in 25% at 20 weeks, in 29% at 28 weeks & in 30% at 36 weeks. It was more common in multiparous women. Age & body mass index were not associated with nasal stuffiness. More than half of the patients reported nasal congestion for more than two weeks during pregnancy. Nasal congestion should be recognized and referred for treatment to improve the quality of pregnancy.

Key words: Rhinitis, pregnancy

Hormonal changes associated with pregnancy result in alteration of different normal physiological functions, which may cause different morbidities. Although major morbidities associated with pregnancy are well known. But there are number of underrecognized health problems that also affect the quality of life. Pregnancy rhinitis is one of these conditions. It is defined as nasal congestion in the last 6 or more weeks of pregnancy without other signs of respiratory tract infection and with no known allergic cause, disappearing completely within 2 weeks after delivery¹. Mackenzie reported nasal congestion during pregnancy, first time in 1898². There is no clear etiology for the pregnancy induced nasal congestion. However, pregnancy associated hormones have been linked to swelling of the mucosal lining of the nose, but there is no definitive evidence for it. Increased levels of estrogen during menstrual cycle and pregnancy have failed to explain the nasal obstruction. Progesterone positive cells have been recognized in fibroblasts of inferior turbinates of nose. They may play a role by changing the consistency of extracellular matrix³. The degree of nasal stuffiness increases with gestational age, as is the level of hormones. These hormones may also indirectly affect nose through their effect on blood volume during pregnancy⁴. Circulating blood volume increases to 40 percent above non-pregnant levels, which may lead to increased nasal airway resistance during pregnancy^{2,5}. The discomfort caused by nasal congestion may not be tolerated as well by pregnant woman who is already experiencing other physical and psychological stress. It may adversely affect pregnancy through an effect on the mother's eating, sleeping and emotional well being or by worsening associated conditions like asthma or sinusitis. The aim of this prospective study was to describe the prevalence of pregnancy induced rhinitis and it's relation with other factors.

Materials and methods:

This prospective study was conducted at Gynae Unit II and ENT unit II, Jinnah Hospital, Lahore. 54 healthy pregnant women aged between 19 and 36 years who had no history

of respiratory allergy or chronic nasal or sinus problems volunteered to enter the study, which was conducted during the period from July 2002 to June 2003. On each visit a detailed obstetrical, medical and nasal history was noted. All patients had no nasal complaints or any medical problem at the time of entry into the study. Body mass index (BMI) was calculated by measuring the weight and height. In addition to general and obstetric examination, a full ENT examination was performed and documented. Apart from last menstrual period gestational age was confirmed from early second trimester obstetric ultrasound measurements of the biparietal diameter and femur length of fetus. Self reported nasal stuffiness was measured on four occasions, at gestational weeks 12, 20, 28 and 36, which was correlated to age, parity and body mass index. Subjective nasal blockage was scored from 0 to 4, with 0 indicating no blockage, 1 mild obstruction, 2 moderate obstruction, 3 severe obstruction and 4 indicating complete obstruction.

Results:

In the study, the mean age of the patients was 24.6 years (between 19 and 36 years) and mean body mass index was 25.2. The prevalence of nasal stuffiness was not influenced by the age or the body mass index of the patients. The prevalence of nasal obstruction at 12, 20, 28 and 36 weeks showed an incremental increase in the frequency of nasal stuffiness with the progression of pregnancy. 16%, 25%, 29% and 30% patients reported nasal stuffiness at 12, 20, 28 and 36 weeks of gestational pregnancy respectively (Table I).

13% patients reported nasal stuffiness on their every visit, while 46% never suffered from the nasal congestion. 30 patients were multigravida and 24 were primigravida. At all the four times of encounter, the multiparous women complained more about the nasal congestion than the primigravida (Table II).

Three multiparous and two primigravidas delivered prematurely before 36 weeks and rest at term. All patients were seen after 4 weeks of delivery and none of them had nasal stuffiness at that time.

Table I

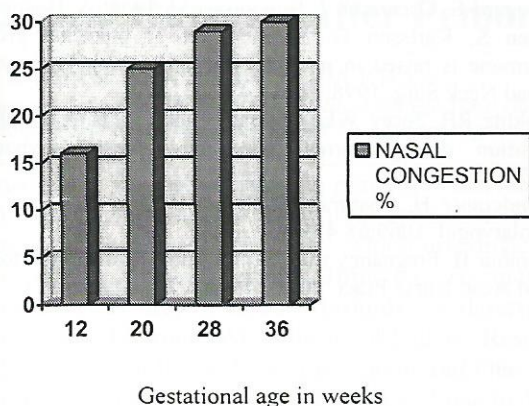


Table II: Gestational age

Age in weeks	Multigravida	Primigravida
12	17%	14%
20	27%	22%
28	30%	27%
36	32%	28%

Discussion:

Chronic nasal symptoms occur commonly in pregnant women adding to the array of health care concerns during this exciting, yet intimidating time of life. This study shows that although under-recognized nasal stuffiness is a common finding during pregnancy. Almost one third of our patients reported nasal stuffiness at the end of pregnancy, which is close to the 32% incidence reported by Mabry². 13% patients had nasal congestion on their all four encounters, while 46% never had this problem. In a retrospective study by Ransom pregnancy was attributed to nasal stuffiness in 18% which is lower than our reported incidence⁶. This may be due to the fact that most of the studies are subjective, relying only on the patient's perceptiveness. Bende in his study reported the increase in the severity of nasal stuffiness between 20 and 30 weeks of gestation⁴. This is clearly obvious in our study also, as compared to 16% at 12 weeks of gestation 30% reported nasal stuffiness at 36 weeks of gestation. Although pregnancy associated hormones are thought to be responsible for this, but there is no definitive evidence⁷. The nasal stuffiness in early pregnancy may be more common but could be an under recognized complaint that is overlooked in comparison to more evident pregnancy related symptoms such as hyperemesis gravidum. The increasing incidence of nasal stuffiness with progression of pregnancy indicates that the underlying pathophysiology persists through out the pregnancy and that the adaptive ability is low.

Our study showed that there is no relation of the nasal stuffiness with the age or the body mass index. However the incidence of the nasal stuffiness was much more common in multigravida than in the primigravida,

although there is no explanation for this, probably with the increase in the parity the women are more able to recognize the changes. In an interesting study by Oga et al, ten pregnancy related subjective symptoms were compared in more than 1000 multigravida and primigravida women⁸. It was observed that multiparous women reported more and severe complaints for 8 of the 10 investigated symptoms, one of which was nasal congestion.

The pathophysiology of nasal congestion during pregnancy is still veiled in obscurity. A causative hormonal influence has been suggested but this has yet to be proved. Bende et al in his study in 1989 showed that serum levels of the hormones oestradiol, progesterone and VIP did not differ significantly in pregnant women with nasal congestion and those without nasal congestion, which was confirmed by the rhinomanometry⁵. Ellegard et al in their prospective study reported significantly higher levels of placental growth hormone in the women with nasal obstruction than without the symptoms⁹. The most recent development in the identification of the pathophysiology of pregnancy rhinitis is detection of progesterone receptors in fibroblasts of inferior nasal turbinates by immunohistochemistry. This possibly indicates a direct influence of progesterone on fibroblasts and therefore on the consistency of extracellular matrix. Additionally, oestrogen and progesterone might cause rhinopathic symptoms indirectly by changing the concentration of neurotransmitters like substance P and their receptors³. However, vasodilatation of the nasal sinusoids does not explain the pregnancy related nasal stuffiness, as it has been seen that central venous pressure during pregnancy decreases¹⁰. Body position plays an important role in the degree of nasal congestion. It is maximum in the supine position, especially in the patients with nasal disorders or with a recent attack of common cold¹¹. Nasal saline douching and steroid nasal spray considerably improves the nasal congestion, suggesting some link to the inflammatory process¹². Most likely the pathogenesis of nasal stuffiness is multifactorial, with a variety of modulating factors involved.

Conclusion:

About half of the patients had nasal stuffiness for three or more weeks during pregnancy, while 13% never suffered from it. Its incidence increases with the progression of pregnancy and it is reported more frequently by the multiparous women as compared to nulliparous women. Although, underrecognized this is a common complaint during pregnancy, its recognition and management improves the quality of pregnancy.

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