

Study of prevalence and risk factors for gastroesophageal reflux in pregnancy at a tertiary care hospital

Alok Misra¹, Eshan Sharma^{2*}

¹Associate Professor, Department of Gastroenterology, MLN Medical College, Allahabad, Uttar Pradesh, INDIA.

²Associate Professor, Department of General Medicine, NIMS Medical Collage Jaipur, Rajasthan, INDIA.

Email: jaindrkamalkumar@gmail.com

Abstract

Background: Gastroesophageal reflux develops in 30 to 50% of pregnant women but the incidence may be as high as 80% in some patient groups. GERD tend to recur with subsequent pregnancies and affects multiparous and nulliparous women similarly. Pregnancy may precipitate or worsen GERD symptoms. Present study was aimed to assess prevalence and risk factors for gastroesophageal reflux in pregnancy in patients at a tertiary care center. **Material and Methods:** Present prospective, cross-sectional study was conducted pregnant women with symptoms and history of GERD, completed first trimester and willing for follow up were included in study. **Results:** During study period total 986 antenatal women were interviewed for GERD symptoms. Total 365 patients had GERD symptoms (prevalence of GERD– 37%) . After applying inclusion and exclusion criteria, total 280 patients were included in present study. 21-25 years was most common age group in present study(48 %). Regurgitation (88 %) was more common symptom than heartburn (67 %) in present study. Pregestational heartburn was present in 34 % patients. 69 % out of 163 patients, who had delivered earlier have history of GERD in previous pregnancies. Family history was noted in 35 %. Smoking was noted in 3% patients. Globus sensation (45 %) was most common atypical symptom in present study. 37 % patents responded to dietary and lifestyle modifications alone, 42 % needed addition of antacids while 21 % required dietary and lifestyle modifications, antacids and PPIs. **Conclusion:** Gastroesophageal reflux disease (GERD) is more prevalent in pregnancy as compared to general population. Early identification of symptoms, lifestyle and dietary modifications can easily reduce symptoms.

Key Words: Gastroesophageal reflux disease, prevalence, pregnancy

*Address for Correspondence:

Dr. Eshan Sharma, Associate Professor, Department of General Medicine, NIMS Medical Collage, Jaipur, Rajasthan, INDIA.

Email: jaindrkamalkumar@gmail.com

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INTRODUCTION

According to The Montreal Consensus, Gastroesophageal Reflux Disease (GERD) is a condition that develops when the reflux of stomach contents causes troublesome

symptoms and/or complications. The characteristic symptoms of GERD, recognized by the Consensus are heartburn and regurgitation¹. Gastroesophageal reflux disease (GERD) occurs when the lower esophageal sphincter relaxes inappropriately, thereby permitting gastric acid to enter the distal esophagus. The most common symptoms associated with GERD are heartburn and acid regurgitation². Persistent GERD symptoms may also lead to sleep deprivation, lower quality of life, and decreased work productivity³. Gastroesophageal reflux develops in 30 to 50% of pregnant women but the incidence may be as high as 80% in some patient groups. In Asian countries, the incidence varies between 2.5 to 7.5%^{4,5}. Many studies indicate that the frequency of its symptoms increases from the first through the third trimester, resolving postpartum. GERD tend to recur with

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subsequent pregnancies and affects multiparous and nulliparous women similarly. Pregnancy may precipitate or worsen GERD symptoms^{6,7}. Increased progesterone hormone levels in pregnancy lead to more frequent and higher relaxation of the lower esophageal sphincter. Esophageal movements are also slowed down and gastric emptying time is prolonged. While this provides maximal food absorption for the developing fetus, the gastric pressure remains high and escape back is facilitated due to this effect. Enlarging fetus, hence the uterus, during the later phases of pregnancy lead to a gradual increase in intra-abdominal pressure, which produces pressure on the stomach, increasing reflux symptoms. Present study was aimed to assess prevalence and risk factors for gastroesophageal reflux in pregnancy in patients at a tertiary care center.

MATERIAL AND METHODS

Present prospective, cross-sectional study was conducted by Department of gastrology at antenatal clinic run by Department of obstetrics and gynecology in MLN Medical College Allahabad,. Duration of study was 12 months. In this cross-sectional study, pregnant women attending antenatal OPD on a specific day (for follow up purpose) were initially interviewed for the symptoms and history of GERD. Pregnant women with symptoms and history of GERD, completed first trimester and willing for follow up were included in study. Patients with diabetes, hypertension or other chronic diseases, as well as those that were taking any medication for heartburn and/or regurgitation, were excluded from the study. Institutional ethical committee approval was taken for present study. A written informed consent was taken for participation in present study. After inclusion in present study, in detail evaluation for symptoms of GERD was done. Symptoms of GER in earlier pregnancy were also recorded. Clinical information pertaining to gastroesophageal reflux (GER) such as heartburn, regurgitation, nocturnal symptoms, aggravating factors (food, bending and supine posture) and relieving factors (food, antacids) and response to treatment were elicited. The presence of atypical symptoms such as globus sensation, increased salivation, vomiting, belching, chest pain, sore throat or dry cough not responding to antibiotics and hiccough along with the duration was recorded. All patients underwent basic ANC evaluation as per national guidelines. Dietary and lifestyle modifications were advised to all patients. As per guidelines if required medical treatment was given. Follow up was taken till 6 weeks postpartum. All details were recorded in a proforma and analysed accordingly.

RESULTS

During study period total 986 antenatal women were interviewed for GERD symptoms. Total 365 patients had GERD symptoms (prevalence of GERD – 37%). After applying inclusion and exclusion criteria, total 280 patients were included in present study. 21-25 years was most common age group in present study(48 %), followed by 26-30 years (27%).

TABLE 1: Age-wise distribution of pregnant women

Age (In years)	Number of patients	Percentage
< 20 years	28	10%
21-25 years	135	48%
26-30 years	76	27%
31-35 years	31	11%
>35 years	10	4%

Regurgitation (88 %) was more common symptom than heartburn (67 %) in present study. Pregestational heartburn was present in 34 % patients. 69 % out of 163 patients, who had delivered earlier have history of GERD in previous pregnancies. Family history was noted in 35 %. Smoking was noted in 3% patients.

TABLE 2: Symptoms of GERD in present study

Symptoms	Number of patients	Percentage
Pregestational heartburn	95	34%
Present pregnancy Heartburn	188	67%
Present pregnancy Regurgitation	247	88%
GERD in previous pregnancies	112/163*	69%
Family history of GERD	98	35%
Smoking	9	3%

(*163 patients had history of previous pregnancy)

Globus sensation (45 %) was most common atypical symptom in present study. Belching (13%), upper abdominal pain (8%), vomiting (6%), dry cough (5%), increased salivation (5%), chest pain (4%), hoarseness (3%), hiccough (2%), halitosis (1%) were other atypical symptoms. Nocturnal symptoms were noted in 31 % patients,

Table 3: Atypical symptoms of gastroesophageal reflux in pregnancy

Atypical symptom	Number of patients	Percentage
Globus sensation	126	45%
Nocturnal symptoms	88	31%
Belching	35	13%
Upper abdominal pain	21	8%
Vomiting	18	6%
Dry cough	15	5%
Increased salivation	13	5%
Chest pain	11	4%
Hoarseness	7	3%
Hiccough	5	2%
Halitosis	4	1%

Meals and change in position are common aggravating factors for GERD. We noted 73 % and 42 % increase in GERD symptoms after meals and on bending/lying respectively.

TABLE 4: Aggravating and relieving factors for GERD

Aggravating and relieving factors		Number of patients	Percentage
Meals	Increases	205	73%
	No change	75	27%
Bending/Lying	Increases	118	42%
	No change	162	58%

All patients were initially advised dietary and lifestyle modifications, during follow up if improvement is not noticed then antacids and PPI (proton pump inhibitor e.g., omeprazole) were started step by step. 37 % patients responded to dietary and lifestyle modifications alone, 42 % needed addition of antacids while 21 % required dietary and lifestyle modifications, antacids and PPIs.

TABLE 5: Treatment response to GERD

Treatment response	Number of patients	Percentage
Dietary and lifestyle modifications	103	37%
Dietary and lifestyle modifications + antacids	118	42%
Dietary and lifestyle modifications + antacids + PPIs	59	21%

Post-partum gradually patients were shifted to dietary and lifestyle modifications only. At the end of 6 weeks post-partum, 89 % patients were satisfied on dietary and lifestyle modifications.

DISCUSSION

Gastroesophageal reflux disease (GERD) is less prevalent in Asia than in the West. With recent changes in lifestyles, it is on an increase in Asia⁸. The risk of GERD is increased by the presence of heartburn during pregnancy. Though the overall prevalence in Asian countries is low, in recent times there has been a changing trend towards a rising incidence of GERD and its complications, coinciding largely with a decline in *Helicobacter pylori* infection⁹. GERD is a chronic disease that tends to relapse and cause extra-esophageal complications, including aspiration pneumonia, reflux-induced asthma, reflux cough syndrome, and laryngitis¹⁰. GERD can also lead to esophageal complications such as erosive esophagitis, bleeding and peptic strictures, and chronic GERD increases the risk of Barrett's esophagus, which can progress to esophageal cancer¹¹. Between 30 – 50% of pregnant women experience symptoms of GORD and this is considered a normal part of pregnancy. Heartburn and regurgitation are the most prevalent symptoms of GERD, that often occur in pregnancy,

becoming worse as pregnancy advances, and decreasing following the delivery^{12,13}. Often symptoms begin late in the first trimester or in the second trimester, with heartburn becoming more severe and frequent as gestation progresses. Heartburn during pregnancy is more likely in women who have had previous episodes or multiple pregnancies, and is inversely correlated with maternal age¹⁴. In our study we noted prevalence of GERD as 37 %. Ramu *et al.*¹³ evaluated the prevalence of GERD in 400 pregnant women and found that the prevalence of GERD in the first trimester was 9.5%, and approximately 50% during the second and third semesters. The prevalence rate in the first trimester probably reflects the prevalence of GERD in the general population. Our incidence is similar to above study. Heartburn and acid regurgitation are the typical symptoms reasonably specific for diagnosis of GER. These symptoms are aggravated after meals and after assuming a recumbent posture. A presumptive diagnosis of GERD can be established in the setting of typical symptoms: heartburn and regurgitation. In pregnancy, GERD can be reliably diagnosed on the basis of symptoms alone. In present study regurgitation (88 %) was more common symptom than heartburn (67 %). Rey E *et al.*⁷ also noted that regurgitation is more common than heartburn in pregnancy. GERD is 3.79 times more common during pregnancy in women who had GERD prior to pregnancy. Heartburn during pregnancy usually does not differ from the classical presentation in the adult population, but it worsens as pregnancy advances. Factors that increase the risk of heartburn are: heartburn before pregnancy, parity, and duration of pregnancy. Maternal age is inversely correlated with the occurrence of pregnancy-related heartburn¹⁴. Lying down is reported to aggravate heartburn in over 80% of pregnant women with GORD. Complications of GORD during pregnancy are rare as the reflux is generally of short duration¹⁵. Ramu *et al.*¹³ noted that non-vegetarianism and cold aerated beverage consumption was associated with greater risk for GER. Age, gravida, weight gain during pregnancy, heartburn during previous pregnancy and dietary habits (spicy food, fried food, cereals, and fruits) did not influence the occurrence of reflux symptoms during the current pregnancy. Lifestyle changes and dietary modifications alleviated GER in about two-third of our pregnant women and nearly a quarter were relieved of symptoms with antacids. The treatment of GORD during pregnancy is conservative and many women with mild or infrequent symptoms can be managed by lifestyle, dietary modifications and the use of antacids or ranitidine (Pregnancy Risk Category B1) or PPIs (Pregnancy Risk Category B3)¹⁵.

For lifestyle modification broadly speaking, there are 3 categories¹⁶:

1. Avoidance of foods that may precipitate reflux (e.g., coffee, alcohol, chocolate, mint, fried or fatty foods)
2. Avoidance of acidic foods that may precipitate heartburn (e.g., citrus, tomato, garlic, onions, carbonated drinks, spicy foods)
3. Adoption of behaviors that may reduce esophageal acid exposure (e.g., weight loss, smoking cessation, eating smaller more frequent meals, raising the head of the bed, and avoiding recumbence for 2–3 hours after meals).

In present study 37 % patients responded to dietary and lifestyle modifications alone, 42 % needed addition of antacids while 21 % required dietary and lifestyle modifications, antacids and PPIs. Many women with GORD during pregnancy will find that their symptoms rapidly improve after giving birth and continued treatment is not necessary. Levels of PPIs excreted in breast milk are low, and a large proportion of any PPI that is ingested by the infant is likely to be destroyed by the acid in their stomach¹⁵.

CONCLUSION

Gastroesophageal reflux disease (GERD) is more prevalent in pregnancy as compared to general population. Early identification of symptoms, lifestyle and dietary modifications can easily reduce symptoms. Sequential addition of antacids, ranitidine and PPIs can help to alleviate symptoms in severe and resistant cases.

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