

PREVALENCE OF GASTROINTESTINAL SYMPTOMS IN PREGNANCY

*B.M. Audu, #S.K. Mustapha,

*Departments of *Obstetrics and Gynaecology and #Medicine [Gastro-Enterology Unit], College Of Medical Sciences, University Of Maiduguri Teaching Hospital Maiduguri, Borno State.*

ABSTRACT

Objectives: This study is aimed at determining the prevalence of gastrointestinal symptoms among healthy pregnant women attending antenatal clinic at the University of Maiduguri Teaching Hospital.

Methods: Questionnaires were randomly administered to consecutive antenatal clinic attendees until the sample size was reached.

Results: Three hundred and seventy pregnant women were interviewed. Heart burns, easy fullness and nausea were the commonest gastrointestinal symptoms in 45%, 40.2% and 39.9% of cases respectively. Primigravidae had significantly more symptoms than multiparae. There were also significantly more gastrointestinal symptoms in the first trimester of pregnancy.

Conclusion: Gastrointestinal symptoms are common among healthy pregnant women. And even though these represent well-known physiological changes, they must be carefully assessed to exclude any pathological disorder that may require intervention.

Key Words: Pregnancy, Gastrointestinal Symptoms.

INTRODUCTION

Pregnancy, though a physiological phenomenon, is associated with changes, which in the non-pregnant woman may represent a pathological presentation. This involves virtually all systems in the body, including the gastrointestinal tract. The physiological changes that occur in the gastrointestinal system include decreased gastrointestinal motility that increases the gut transit time with increased water absorption and a tendency to constipation¹. These must be distinguished from symptoms associated with gastrointestinal disorders that may occur incidentally in pregnancy.

Heartburn is also common², presenting as epigastric or retrosternal pain. It results from regurgitation of acid mouthfuls due to increased intragastric pressure without increased oesophageal cardiac sphincter tone. There may also be reflux of bile into the stomach due to pyloric incompetence. These may all be due to increased progesterone or decreased motilin. Nausea and vomiting are common symptoms seen in about 50% of pregnancies especially in the first trimester³. It usually occurs in the morning hence "morning sickness" but may occur at any period of the day, extreme cases may be associated with multiple gestations or molar pregnancy resulting in hyperemesis gravidarum.

OBJECTIVE

The objective of the study was to identify the prevalence of gastrointestinal symptoms among healthy pregnant women attending antenatal care at the Department of Obstetrics and Gynaecology, University of Maiduguri Teaching Hospital, Maiduguri.

SUBJECTS AND METHODS

The study population was of healthy pregnant women at various gestational ages attending routine antenatal care clinic in the University of Maiduguri Teaching Hospital. They had questionnaires administered enquiring about the presence or otherwise of gastrointestinal symptoms at the gestational age that the patient was seen.

RESULTS

Three hundred and seventy one pregnant women were interviewed. They were aged 18-42 years with a mean of 26.6 ± 4.9 and their parity ranged from 0-10 with a mean parity 1.8 ± 2.3 . Table 1 shows that 74.7% were in their third decade with 38 (10.2%) grand multipara. Only 18 (4.9%) were in their first trimester, while there were only 4 (1.1%) twin pregnancies.

Table 2 shows that the commonest gastrointestinal symptom was heart burns (45.0%) followed by easy fullness (40.2%) and nausea (39.9%). Dysphasia was uncommon with only one patient admitting to it.

Primigravidae, those carrying their first pregnancy, had significantly more symptoms, statically, than

those who had previously delivered as shown on table 3. However, this was not the case for borborygmi. Similarly, there were statistically significant differences between gestational age and all the gastrointestinal symptoms except borborygmi, diarrhoea and constipation (Table 4). With symptoms being significantly more prevalent in the first trimester (≤ 13 weeks) of pregnancy.

Table 1: Age, Parity and Gestational Age and number of Fetuses

Factors	Number	Frequency
1. Age		
15-19	15	4.0
20-24	122	32.9
25-29	155	41.8
30-34	44	11.9
≥ 35	35	9.4
Total	371	100
2. Parity		
0	156	42.0
1 - 4	177	47.7
≥ 5	38	10.2
Total	371	100
3. Gestational Age (weeks)		
< 13	18	4.9
14 - 27	83	22.4
≥ 28	270	72.8
Total	371	100
4. Number of fetuses		
1	367	98.9
2	4	1.1
Total	371	100

Table 2: Symptoms

Symptoms	Number	Frequency (%)
Heart burns	167	45.0
Easy fullness	149	40.2
Nausea	148	39.9
Epigastric pains	115	31.0
Vomiting	97	26.1
Anorexia	80	21.6
Borborygmi	48	12.9
Excessive flatus	44	11.9
Excessive belching	31	8.4
Diarrhoea	27	7.2
Constipation	25	6.7
Dysphagia	1	0.3

Table 3: Association between Parity and Symptom

Parity	0	1-4	> 5	Total
1. Heart burns				
No	47	129	128	204
Yes	109	48	10	167
Total	156	177	38	371
	$X^2 = 67.214, df = 2, P = 0.000$			
2. Easy fullness				
No	77	113	32	222
Yes	79	64	6	149
Total	156	177	38	371
	$X^2 = 17.702, df = 2, P = 0.000$			
3. Nausea				
No	69	128	26	223
Yes	87	49	12	148
Total	156	177	38	371
	$X^2 = 28.498, df = 2, P = 0.000$			
4. Epigastric pain				
No	67	160	29	256
Yes	89	17	9	115
Total	156	177	38	371
	$X^2 = 88.331, df = 2, P = 0.00$			
5. Vomiting				
No	92	155	27	274
Yes	64	22	11	97
Total	156	177	38	371
	$X^2 = 35.288, df = 2, P = 0.00$			
6. Anorexia				
No	104	150	37	291
Yes	52	27	1	80
Total	156	177	38	371
	$X^2 = 24.995, df = 2, P = 0.00$			
7. Borborygmi				
No	129	157	37	323
Yes	27	20	1	48
Total	156	177	38	371
	$X^2 = 6.65, df = 2, P = 0.036$			
8. Excessive flatus				
No	121	169	37	327
Yes	31	38	1	44
Total	156	177	38	371
	$X^2 = 28.911, df = 2, P = 0.00$			
9. Excessive belching				
No	146	156	38	340
Yes	10	21	0	31
Total	156	177	38	371
	$X^2 = 7.081, df = 2, P = 0.029$			
10. Diarrhoea				
No	136	175	33	344
Yes	20	2	5	27
Total	156	177	38	371
	$X^2 = 18.869, df = 2, P = 0.000$			
11. Constipation				
No	138	176	32	346
Yes	18	1	6	19
Total	156	177	38	371
	$X^2 = 18.869, df = 2, P = 0.000$			

Gestational Age	> 13	14-27	≥ 28	Total
1. Heartburns				
No	10	27	167	204
Yes	8	56	103	167
Total	18	83	270	371
		$X^2 = 22.054, df = 2, P = 0.000$		
2. Easy fullness				
No	3	45	174	222
Yes	15	38	96	149
Total	18	83	270	371
		$X^2 = 17.435, df = 2, P = 0.000$		
3. Nausea				
No	0	49	174	223
Yes	18	34	96	148
Total	18	83	270	371
		$X^2 = 29.279, df = 2, P = 0.000$		
4. Epigastric pain				
No	10	44	202	256
Yes	8	39	68	115
Total	18	83	270	371
		$X^2 = 15.708, df = 2, P = 0.000$		
5. Vomiting				
No	2	51	221	274
Yes	16	32	49	97
Total	18	83	270	371
		$X^2 = 52.259, df = 2, P = 0.000$		
6. Anorexia				
No	10	60	221	291
Yes	8	23	49	80
Total	18	83	270	371
		$X^2 = 9.288, df = 2, P = 0.000$		
7. Borborygmi				
No	18	75	230	323
Yes	0	8	40	48
Total	18	83	270	371
		$X^2 = 4.321, df = 2, P = 0.000$		
8. Borborygmi				
No	18	62	247	327
Yes	0	21	23	44
Total	18	83	270	371
		$X^2 = 19.651, df = 2, P = 0.000$		
9. Excessive Belching				
No	16	69	255	340
Yes	2	4	15	31
Total	18	83	270	371
		$X^2 = 10.796, df = 2, P = 0.000$		
10. Diarrhoea				
No	18	74	252	344
Yes	0	9	18	27
Total	18	83	270	371
		$X^2 = 3.3126, df = 2, P = 0.210$		
11. Constipation				
No	16	77	251	246
Yes	0	6	19	25
Total	18	83	270	371
		$X^2 = 1.371, df = 2, P = 0.504$		

DISCUSSION:

Gastrointestinal (GI) disorders are among the most frequent complaints during pregnancy. In most cases these symptoms are manifestations of the physiological changes that accompany pregnancy. Other pregnant patients may present with chronic GI disorders that require special consideration during pregnancy. Understanding the prevalence and the presentation of various GI symptoms is necessary to optimise care for these patients.

In our study, heartburn was the commonest symptom reported, occurring in 45.0% of the subjects. This is keeping with the findings of other studies, which showed that heartburn is experienced 45-80% of pregnant women². Its prevalence tended to increase with increasing gestational age and decrease with parity. The origin of heartburn in pregnancy is multifactorial, but the predominant factor is a decrease in lower oesophageal sphincter (LOS) pressure caused by female sex hormones^{4,5}. The peptide hormone relaxin, which attains high circulatory level during pregnancy, has been shown to depress gastric and small-bowel motility through a nitric acid-mediated mechanism, thereby enhancing gastro-oesophageal reflux⁶. Mechanical factors also play a role. These include increased intra-abdominal pressure from the gravid uterus and displacement of the LOS into the thorax where the sphincter is less capable of resisting reflux³. Pregnancy heartburn is commoner in Caucasians than in Nigerians because the sphincter in non-pregnant Caucasians is often intrathoracic and is thus more easily displaced completely into the thorax by the gravid uterus⁷.

Symptomatic gastroesophageal reflux disease (GERD) should be managed with a step-up algorithm beginning with lifestyle modification and dietary changes, which include eating small frequent meals, refraining from eating within 3 hours of bedtime and elevation of the head of the bed. Antacids and sucralfate are considered the first line pharmacological treatment. If symptoms persist, H₂ – receptor antagonists should be used. Ranitidine is preferred because of its documented efficacy and safety profile in pregnancy, even in the first trimester⁸. Proton pump inhibitors (PPI) are reserved for those who fail to respond. Lansoprazole may be the preferred PPI because of its safety profile in animals and case report of safety in human pregnancies⁹.

Easy fullness or satiety, which was reported by 40.2% of the subjects, occurs principally as a result of gastric compression by the growing uterus. This is supported by the observation that the prevalence of easy fullness increases with advancing pregnancy. Nausea with or without vomiting is common in early pregnancy. Nausea occurs in 50-90% of pregnancies, while vomiting is an associated complaint in 25- 55% of pregnancies³. In this study all the women (100%) within the first trimester (gestational age of ≤ 13

weeks) had nausea, while 16 out of 18 (88.8%) had vomiting. However, frequency of both nausea and vomiting declined with advancing gestational age. The pathophysiology of nausea and vomiting in pregnancy is debatable. It has been attributed to hormonal fluctuations, gastrointestinal motility disorders and psychosocial factors^{3,10}. The severity of symptoms dictates therapy. Mild symptoms can be managed by reassurance, avoidance of precipitating factors and changes in diet (e.g. smaller more frequent meals, increased carbohydrate intake, low-fat diet). For severe and more intractable symptoms antiemetics can be used. Pyridoxine (vitamin B6) can be used in conjunction with antiemetics in patients with severe nausea and vomiting.

Hyperemesis gravidarum is characterised by intractable vomiting that occurs in early pregnancy. It is considered as the severe end of the spectrum of nausea and vomiting in pregnancy. It occurs in 3-10 cases per 1000 pregnancies and it is the third leading cause for hospitalisation during pregnancy^{3,11}. Risk factors include multiple gestations, trophoblastic disease nulliparity and obesity³. Treatment consists of fluid and electrolyte replenishment, antiemetics and pyridoxine. Corticosteroids have been tried in severe and refractory cases³.

Epigastric pain was reported by 31.0% of the subjects. Epigastric pain in pregnancy could be a manifestation of gastroesophageal reflux, bile reflux (causing gastritis), peptic ulcer disease (PUD) or gallstones. Peptic ulcer is uncommon in pregnancy because of the decreased acid secretion that occurs in pregnancy. However, *Helicobacter pylori* gastritis, cigarette smoking, alcoholism and stress are risk factors for PUD during pregnancy¹². H₂- receptor antagonists are the first choices for the treatment of PUD in pregnancy. Treatment for the eradication of *H. pylori* should be initiated after pregnancy and breast-feeding because some of the recommended drugs are relatively contraindicated in pregnancy. Pregnancy is also associated with increased risk of gallstone formation. Thirty one percent develop sludge during pregnancy and 2% develop gallstone¹³. Cholecystectomy is the second most common non-obstetric surgical procedure after appendicectomy¹³. Apart from Epigastric pain, other features that are indicative of gallstones are right hypochondrial pain, fever vomiting and jaundice.

The incidence rate of constipation in pregnancy is 11-38%¹⁴. The aetiology is multifactorial. Possible factors include decreased motilin level, decreased small bowel and colonic motility, increased absorption of water and iron supplementation¹⁴. Extensive evaluation is seldom warranted. Treatment include dietary changes (high fibre diet), increased physical activity and where necessary stool softeners such as sodium docusate and stimulant laxatives. However, castor oil and mineral oil should not be

used in pregnancy. Diarrhoea has on physiological bases in pregnancy. Causes mirror those of the nonpregnant state. Patients should be evaluated and treated appropriately. Where there is need to give antibiotics, non-absorbable antibiotics such as phthalylsulphathiazole are preferred. Dysphagia is uncommon in pregnancy¹⁵. When it occurs it is usually due a coexisting pathological condition, which should be sought and treated appropriately.

REFERENCES:

1. **Pipkin FB.** Maternal Physiology in Pregnancy (Chamberlin G and Steer P (Eds) Turnbull's Obstetrics, Third Edition. London, Churchill Livingstone Publication, 2001 (pp71-91).
2. **Baron TH, Richter JE.** Gastroesophageal disease in pregnancy. *Gastroenterol Clin North Am.* 1992; 21 (4): 777-9.
3. **Koch KL, Frizzera CL.** Nausea and vomiting during pregnancy. *Gastroenterol Clin North Am.* 2003; 32(1): 201-34.
4. **Fisher RS, Roberts GS, Grabowski CJ and Cohen S.** Inhibition of lower oesophageal sphincter circular muscle function by female sex hormones. *Am J Physiol.* 1978; 234(3): E 243-7.
5. **Ritchter JE.** Gastroesophageal disease during pregnancy. *Gastroenterol Clin North Am.* 2003; 32(1): 235-61.
6. **Bani D., Baccari MC., Quattrone S., Nistri S., Calamai F.** et al. Relaxin depresses small-bowel motility through a nitric oxide-mediated mechanism. Studies in mice. *Biol Reprod.* 2002; 66(3): 778-84.
7. **Bassey OO.** Pregnancy heartburn in Nigerians and Caucasians with theories about aetiology based on manometric recordings from the oesophagus and the stomach. *Br J Obstet gynaecol.* 1977; 84 (6): 439-43.
8. **Larson JD, Patatianian E, Miner PB JR:** et al. Double-blind, placebo controlled study of ranitidine for gastroesophageal reflux symptoms during pregnancy. *Obstet Gynaecol.* 1997; 90(1): 83-7.
9. **Nikfar S, Abdollahi M, Moretti ME.** Use of proton pump inhibitors during pregnancy and rates of major malformations: a meta-analysis. *Dig Dis Sci.* 2002; 47 (7): 1526-9.
10. **Koch KL.** Gastrointestinal factors in nausea and vomiting of pregnancy. *Am J Obstet Gynecol.* 2002; 185 (5): S 198-203.
11. **Yost NP, McIntire DD, Wians FH Jr, Ramin SM, Balko JA.** et al. A randomised placebo-controlled trial of corticosteroids for hyperemesis due to pregnancy. *Obstet Gynaecol.* 2003; 102 (6): 1250-4.
12. **Cappell MS.** Gastric and duodenal ulcers during pregnancy. *Gastroenterol Clin North Am.* 2003; 32 (1): 263-308.
13. **Gilat T, Konikoff F.** Pregnancy and the biliary tract. *Can J Gastroenterol.* 2000; 14; 55D- 59D
14. **Jewell DJ, Young G.** Interventions for treating constipation in pregnancy. *Cochrane Syst Rev;* (2); CD 001142.
15. **Aggarwal R, Shahi HM, Misra A.** Oesophageal achalasia presenting during pregnancy. *Indian J Gastroenterol.* 1997; 16(2):72-3