

## Ear, Nose & Throat Problems among Pregnant Women of Bangladesh- A Study of 140 cases

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### Abstract

### Original Research Article

**Introduction:** Pregnancy is a special period of altered physiological & psychological condition of woman which is mainly due to the secretion of hormones from placenta like estrogen, progesterone, HCG (Human Chorionic Gonadotrophin), Human Placental Lactogen, Somatomammotropin, Human Chorionic Thyrotrophin & Human Chorionic Corticotrophin etc. In this changed internal milieu a special set of diseases (problems) occur in pregnant women. This study aimed to find out the ear, nose & throat problems among pregnant women of Bangladesh.

**Methods:** A Cross-sectional study to find out the common ENT problems that face our pregnant ladies of various age and different part of pregnancy which was observed both at the tertiary level hospitals in Dhaka city & rural consultation center at Chandpur district. **Results:** This study included 140 pregnant ladies of 16 to 45 years of ages of whom mostly 61(43.57%) presented with ear (otological) problems followed by nasal (rhinological) problem 40(28.57%) then throat 29(20.71%) & neck disorders 10(7.14%). Among all these diseases otomycosis scores the highest comprising 29(20.7%), followed by lumpy feeling in throat 26(18.5%) followed by nasal blockage including deviated nasal septum, allergic rhinitis, sinusitis, hypertrophied turbinates 25(17.8%), CSOM 16(11.4%) & altered smell sensation 10(7.1%). Of them mostly 94(67.14%) in the age group of 21-30 years, followed by 31-40 years of age group 25(17.85%), then age group up to 20 years actually (16-20 years) which comprises 19(13.57%) and least patients in the age group of above 41 years this group comprises only 2(1.42%) patients. Most of the presenting patients were multiparous 86 (61.4%) & 54 (28.6%) were primi. Among all presenting women mostly presented in 1<sup>st</sup> (40.7%) & 2<sup>nd</sup> (40%) trimester and the rest in 3<sup>rd</sup> trimester. **Conclusion:** Pregnancy is a special physiological condition where a unique group of ENT problems occurred during this period. Although some of them are self-reverting and may reverse at postpartum period but some deserve immediate, expert, judicious and specific treatment to prevent further harm to mother as well as fetus.

**Keywords:** Pregnancy, ENT, Rhinitis, CSOM, ASOM.

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## INTRODUCTION

Pregnancy is a special period of altered physiological & psychological condition of women which are mainly due to the secretion of hormones from placenta like estrogen, progesterone, HCG (Human Chorionic Gonadotrophin), Human Placental Lactogen, Somatomammotropin, Human Chorionic Thyrotrophin

& Human Chorionic Corticotrophin etc [1, 2]. These hormones produce tremendous change in physiology & immunological response of pregnant ladies. As a part of this changed milieu special group of ENT problems occur during pregnancy, some of these changes are temporary and disappear after child birth, but some or their sequel may persist event after child birth [3].

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These Changes are due to water & electrolyte retention in response to estrogen and progesterone, altered immunological & dermatological responses due to increased cortisol, which makes the pregnant ladies to easy prey to some viral (Herpes) & fungal (otomycosis) infections [4, 5]. Predominant ear problems include fullness, heaviness and certain degrees of deafness with a higher rate of fungal infection (Otomycosis) in the soil of altered immunological milieu in association of persisting diseases (CSOM) & predisposing factor (e.g. diabetes) [6, 7]. Common nasal symptoms include nasal stuffiness, rhinitis, epistaxis & altered sense of smell. Nasal obstruction and rhinitis mostly occur at the latter part of first trimester or early 2<sup>nd</sup> trimester presenting with clear rhinorrhea and edematous nasal mucosa usually occurs due to increased vascularity and mucosal oedema due to over activity of the parasympathetic system, resulting in increased glandular secretion and vascular congestion in association with fluid retention [8]. Among the throat and neck related problems in pregnancy lumpy feelings in throat due to GERD, PUD or Pharyngitis is most common which become worsen in late pregnancy. The pathophysiology of GERD includes primarily two factors, namely decreased lower esophageal sphincter tone in response to increased progesterone and also increased intra-abdominal pressure, both of these worsen in last trimester. The pregnant woman has a 3.3 times increased risk of developing idiopathic Bell's palsy [9]. This increased risk is due to edema of facial nerve & surrounding tissues due to increased interstitial fluid retention which causes compression & ischemia of nerve in fallopian canal. The other major hypothesis is viral as gestational immunosuppression occurs due to raised cortisol level which causes reactivation of latent Herpes virus [10]. Pregnancy also associated with thyroid nodules, along with hypo or hyperthyroidism. Hypothyroidism during pregnancy is very important to be recognized early due to its adverse effect on fetus and association with perinatal mortality and congenital malformation affecting both mental and somatic development of the fetus [11]. There are also changes in gum larynx taste bud & salivary glands causing changes in taste and ptialism [12, 13]. Although we did not include hyperemesis gravidarum and hyperptyalism in this study because these first trimester symptoms usually occurs in almost all pregnancies and rarely these patients seek ENT consultation rather they are managed exclusively by obstetricians. In this paper we tried to focus on common ENT problems in pregnant women for which they have to sought ENT consultation in Bangladesh.

## OBJECTIVES

1. To find out the common ENT Problems in Pregnancy.
2. To acquaint and equipped our ENT specialist and Gynecologist with these problems for better management of pregnant women and

safety of their growing fetus, ultimately ensuring a better future for of all of us.

## METHOD

This is a researcher-administered questionnaire based cross sectional study carried out at two tertiary level hospitals at Dhaka city and in the researcher's rural out-patient consultation center at Hajigonj, Chandpur. Study was done over 140 pregnant ladies attending these hospitals and consultation centers, who voluntarily consented to participate in this study. An ethical committee was formed beforehand, they set ethical guidelines and ethical issues were followed accordingly. Thorough ENT and relevant systemic examination along with relevant investigations were done for every patient. Collected data were expressed in the form of tables and analysis done by SPSS.

### Inclusion Criteria

1. All pregnant women presented in study place with ENT problems and voluntarily consented to participate this study.

### Exclusion Criteria

1. Non-pregnant ladies with ENT problems.
2. Pregnant ladies with ENT problems but not consented to participate in this study.
3. Hyperemesis gravidarum, Craving for unusual food & hyperptyalism patients.

## RESULT

In this study 140 pregnant women with ENT problems were included as study subjects, most of them 94 (67.7%) were in the age group of 21-30 years, followed by 31-40 years 25(17.8 %), followed by 20 years and below age group 19(13.5%) & only 2(1.42%) in the age group above 40(Table-1). Among the participant maximum 86 (61.4%) were multiparous and rest 54(38.6%) were primi (Table-2). A large number 56 (16, 19, 18, 2 respectively from ear, nose throat & neck related disorders group) of patients in our study group has been suffering from more than one ENT problems which were present before the presenting pregnancy and others 94(60%) developed these conditions in this observed pregnancy for the first time (Table-8, 10, 11). Most commonly 61(43.57%) pregnant women suffered from otological problems. Among them largest group has made by otomycosis 29 (20.7%) followed by CSOM -16(11.42%) ASOM-07(05%). Otitis media with effusion (OME), TM (Temporomandibular) arthritis, tinnitus with deafness comprises 2(1.42%) of each and Herpes zoster, Furuncle of External Auditory Canal (EAC), Meniere's disease comprises 1(0.71%) from each (Table-4). Among the rhinological conditions (Table-5) most patients 25(17.85%) suffered from nasal blockage which includes conditions like Deviated nasal septum, Allergic rhinitis, hypertrophied turbinates, & sinusitis. Other nasal conditions included altered smell sensation

10(7.1%), epistaxis 06(4.28%), nasal Herpes Simplex 1(0.71%). The most common presenting symptoms of throat disorder (Table-6) was lumpy feeling in throat 26(18.57%) which included Pharyngitis, PUD (peptic ulcer disease), GERD (gastroesophageal reflux disorder) followed by recurrent tonsillitis 3(2.14%). Although hyperptyalism, hyperemesis gravidarum craving for unusual food in first trimesters were not

included in this study because these group of patients exclusively handled by gynecologists, we only considered conditions which needed otolaryngological consultations as well. Regarding neck related disorders in pregnancy as shown in Table-7 we found 3 as nodular goitre 2 TM arthritis and 1 each from adenoid cystic carcinoma of parotid, parotid abscess, subacute thyroiditis, cervical spondylitis & Bell's palsy.

**Table 1: Age distribution of the study population (N=140)**

Disease	Upto 20 years age group	21-30 years Age group	31-40 years Age group	>40 years age group	Total
Ear	06	45	10	00	61
Nose	10	23	07	00	40
Throat	03	19	06	01	29
Neck	00	07	02	01	10
<b>Total</b>	<b>19</b>	<b>94</b>	<b>25</b>	<b>02</b>	<b>140</b>
%	13.57	67.14	17.85	2.85	100.0

**Table 2: Relative distribution of ENT problems in terms of different gravida (N=140)**

Disease	Gravida 1	Gravida 2	Gravida 3	Gravida 4	Total
Ear	21	22	13	05	61
Nose	15	18	06	01	40
Throat	15	08	06	00	29
Neck	03	05	01	01	10
<b>Total</b>	<b>54</b>	<b>52</b>	<b>26</b>	<b>07</b>	<b>140</b>
%	38.5	36.0	18.57	5.0	100.0

**Table 3: Distribution of all pregnant women with ENT diseases in terms of different trimesters of pregnancy (N=140)**

Disease	1 <sup>st</sup> trimester	2 <sup>nd</sup> trimester	3 <sup>rd</sup> trimester	Total
Ear	22	28	11	61
Nose	25	12	03	40
Throat	06	12	11	29
Neck	04	04	02	10
<b>Total</b>	<b>57</b>	<b>56</b>	<b>27</b>	<b>140</b>
%	40.7	40.0	19.3	100.0

**Table 4: Different Otolological conditions diagnosed during pregnancy (N=140)**

Conditions	N	%
Otomycosis	29	20.71
CSOM	16	11.42
ASOM	07	5.0
OME	02	1.42
TM arthritis	02	1.42
Herpes Zoster infection	01	0.71
Furuncle in EAC	01	0.71
Tinnitus & deafness	02	1.42
Menieres disease	01	0.71

**Table 5: Different Rhinological conditions diagnosed during pregnancy (N=140)**

Symptoms	Conditions	n	%
Nasal Blockage	Deviated Nasal Septum	09	6.42
	Allergic Rhinitis	08	5.71
	Sinusitis	05	3.57
	Hypertrophied Inferior Turbinate	03	2.14
	Altered smell sensation	10	7.14
	Epistaxis	04	
	Nasal Herpes Simplex	01	0.71

**Table 6: Different throat related conditions diagnosed during pregnancy (N=140)**

Symptoms	Conditions	n	%
Lumpy Feeling in Throat	GERD	12	8.57
	PUD	10	7.14
	Pharyngitis	04	2.85
	Recurrent Tonsillitis	03	2.14

**Table 7: Distribution of different neck related disorders in pregnancy in this study group (N=140)**

Disorders	N	%
Nodular goiter	03	2.14
Adenoid cystic carcinoma of right parotid	01	0.71
Parotid abscess	01	0.71
Cervical spondylitis	01	0.71
TM arthritis	02	1.42
Sub-acute thyroiditis	01	0.71
Bell's palsy	01	0.71

**Table 8: Otological conditions arises in pregnancy with pre-existing ENT diseases (N=140)**

Pre-existing ENT diseases	N	%
CSOM	11	7.85
URTI	03	2.14
Deviated nasal septum	03	2.14

**Table 9: Otological conditions in pregnancy associated with other predisposing conditions (N=140)**

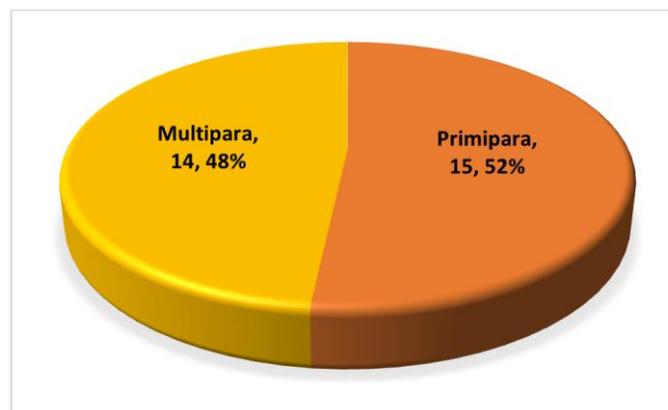
Predisposing conditions	N	%
DM	05	3.57
SLE	01	0.71
Vitamin D deficiency	01	0.71
URTI	03	2.14
Herpes Zoster infection	01	0.71

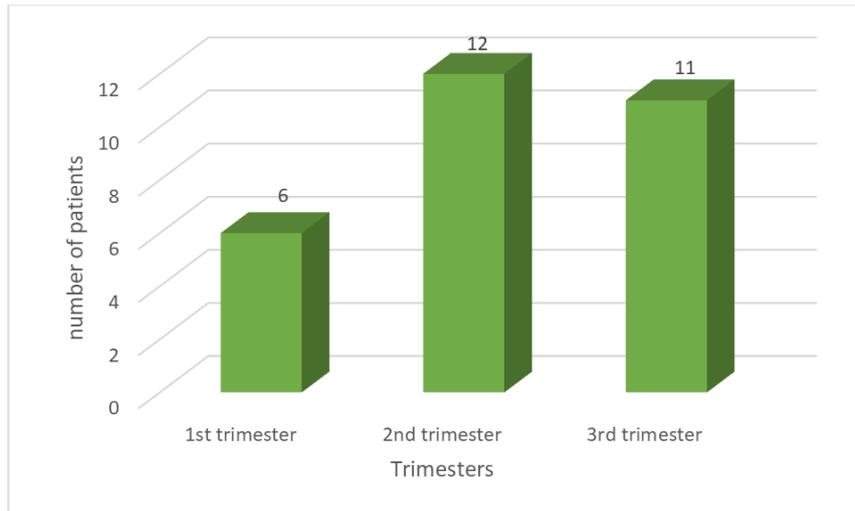
**Table 10: Throat related conditions in pregnancy with pre-existing diseases (N=140)**

Pre-existing diseases	N	%
PUD	02	1.42
Allergic rhinitis & pharyngitis	10	7.14
Deviated nasal septum	01	0.71
GERD	05	3.57

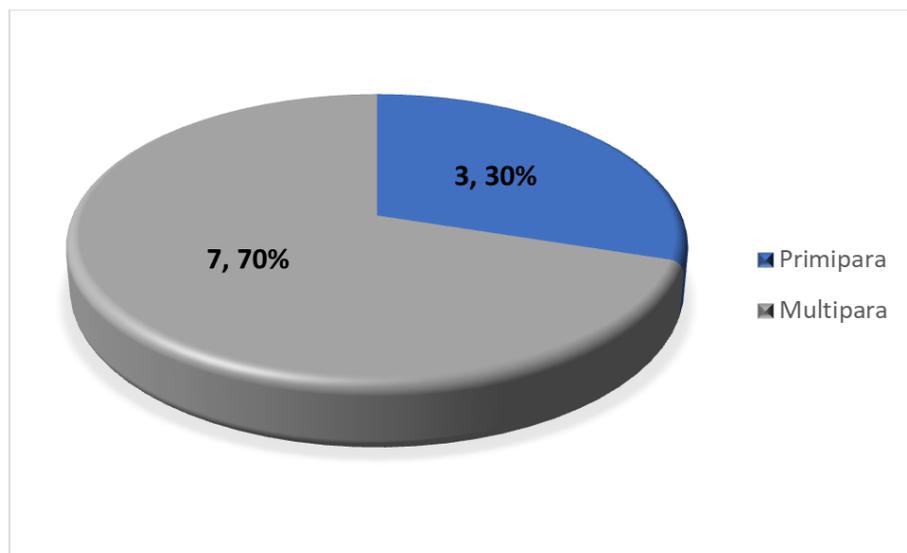
**Table 11: Rhinological conditions in pregnancy associated with other predisposing conditions (N=140)**

Predisposing conditions	N	%
Hypothyroidism	01	0.71
Migraine	02	1.42
HTN	02	1.42
DM	01	0.71

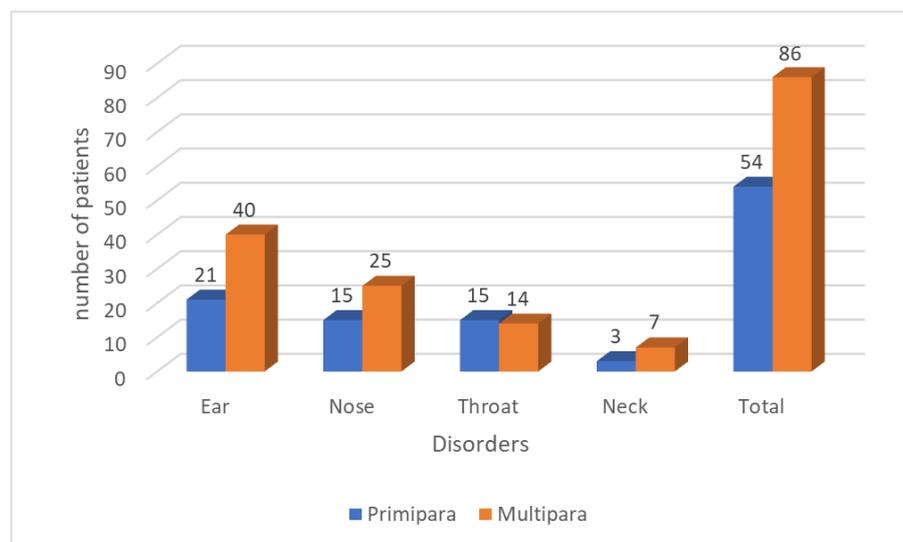
**Figure 1: Relative distribution of throat diseases in primi & multiparous women (N=29)**



**Figure 2: Distribution of throat associated conditions in different trimesters of pregnancy (N=29)**



**Figure 3: Distribution of neck related disorders in terms of parity (N=10)**



**Figure 4: Distribution of all pregnant women with ENT diseases in terms of parity (N=140)**

## DISCUSSION

This study includes 140 cases (pregnant women) of whom maximum in the age group of 21 to 30 years 94(67.14%) which corresponds with the study of Anil Suri *et al.*, who found 87% women in this group. Of 140 women 54(38.57%) was primi forming single largest group which is similar with Anil Suri *et al.*, [10] where it was 50% and with study of singhai where it was 55% but if we considered all other gravaida as a single group in multiparity then they form the largest group covering rest 61% of women [14]. Among the ENT disorders we found otological (Ear) problems are most prevalent (61) of them otomycosis comprises single largest group 29 (20.71%). Otomycosis also shown as commoner disease 6.25% in one of the Nigerian studies of Robert Bassey Mgbe *et al.*, [19]. We think it is due to same humid climate of both countries which favors the growths of this pathogen in the soil of pregnancy induced immunosuppression. Another important issue is that about 5 cases of these 29 patients were diabetic which also favors the growth of otomycosis. Other otological conditions found in this study includes CSOM, ASOM, OME, TM arthritis, Herpes Zoster infection, furuncle in EAC, tinnitus, Meniere's disease (11.42%, 5%, 1.42%, 1.92%, 0.71%, 0.71%, 1.42%, 0.71% respectively) while other studies (Suri *et al.*) found that CSOM & ASOM were same as 8.16% and Ahmed *et al.*, shows these were 10.1% & 4.3% [10, 15]. These findings were almost similar to us. But in other studies tinnitus hearing loss is higher which was 20.4% in Suri *et al.*, studies & 33% in Schmidt *et al.*, studies [10,16]. Regarding nasal problems nasal blockage & rhinorrhoea forms the main bulk 26(17.85%) which includes hypertrophied turbinates, allergic rhinitis, deviated nasal septum with or without sinusitis which is almost similar to the findings of Mabry RL *et al.*, [8]. 24% and Suri *et al.* 28.8% [10]. We found Epistaxis in 4 cases which were 10% of all nasal problems and 2.85% of all ENT problems in pregnancy, although this figure is higher in other studies 63.3% & 52% respectively in the studies of Suri *et al.*, & Purushothaman *et al.*, [10,17]. We think this variation is due to different geographical condition. We found altered smell sensation in 10 cases which also formed a large bulk of nasal problems which was almost 25% of nasal problems and 7.14% of all ENT problems in pregnancy, which is similar to the findings of Whitefield *et al.*, [18] where it is 26.92% and 11.25% in a Nigerian study [19]. Hyperosmia in pregnancy is explained by increased presence of estrogen receptors and swelling of olfactory membrane. Among the throat problems lumpy feelings in throat form the major bulk 26 out of 29 pregnant women with throat problems and 18.57% of the study group. They include GERD, PUD & pharyngitis which are also higher in other in studies 20.6% at first trimester Suri *et al.*, study & 26.1 % at first trimester in Malfertheiner SF *et al.*, study [10, 20]. And also further higher in late trimester. It is noteworthy to mention again that we did not include

hyperemesis gravidarum cases in our study as it is ubiquitous in first trimester pregnancy and managed exclusively by gynecologist. Regarding neck related disorders we found 3 (2.1%) nodular goiter and adenocystic carcinoma of parotid, parotid abscess subacute thyroiditis, cervical spondylitis single case from each component. Goiter a bit higher in pregnancy or preexisting goiter increases in size in pregnancy due to increase demand of thyroid hormones. Although we found only one case of Meniere's disease and one Bell's palsy patients with pregnancy but it is significant as Meniere's disease may first appear in pregnancy due to fluid and water retention and which also causes facial nerve compression in fallopian canal leads to Bell's palsy [9, 21].

## CONCLUSION

Pregnancy is a special physiological condition where a unique group of ENT problems occurred during this period. Although some of them are self-limiting and may reverse at postpartum period but some deserve immediate, expert and specific treatment to prevent further harm to mother as well as fetus.

## RECOMMENDATION

It is very important for our ENT specialist, gynecologist to become acquainted with these problems and ensure timely, specific, judicious measures for these problems to avoid harm to mothers and their growing fetus and to make a healthy and productive future.

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