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Hyperemesis Gravidarum and Obstetric Outcome

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Aims: This study was conducted to evaluate maternal characteristics and obstetric outcomes among women with hyperemesis gravidarum during pregnancy.

Methods: A prospective hospital based study was conducted at Nepal medical college and teaching hospital over the period of two years where all the women admitted with history of hyperemesis gravidarum were evaluated. Hyperemesis gravidarum was defined as intractable nausea/vomiting in pregnancy that leads to dehydration, nutritional deficiency, electrolyte and metabolic disturbances and considerable ketonuria that may require hospitalization. The age of women, parity, gestational age, method of treatment and duration of hospital stay were analysed.The fetal outcome evaluated were incidence of preterm birth, apgar score <7 at 5 mins of birth, low birth weight, perinatal deaths and congenital anomalies in baby.

Results: There were 52 women admitted with hyperemesis gravidarum among all obstetric admission (N= 2080). The incidence of hyperemesis gravidarum was 2.5% of all pregnancy. The condition was seen more commonly in nulliparous (61.5%) than in multiparous women. It was less common in women of parity 3 or more. The problem was identified maximum (50%) in gestational age of 5-7 weeks though one case was seen in gestational age of 20 weeks also. The mainstay of treatment was supportive. The range of hospital stay was 1-10 days with mean hospital stay 2.26 days. The preterm delivery rate was 4.8% and none of the babies were low birth weight. All the babies had apgar score >7 at 5 mins of birth. There were no congenital anomalies and no perinatal deaths were noted.

Conclusions: Women with hyperemesis gravidarum did not have adverse obstetric outcome in this study.

Keywords: Fetal outcome, hyperemesis gravidarum, maternal outcome

INTRODUCTION

Nausea and vomiting during pregnancy is a common experience affecting 50 - 90% of all women.[1-2] Nausea and vomiting are usually limited to first trimester, but 20% of women have symptoms that continue throughout pregnancy.[1] Hyperemesis gravidarum is the most severe form of nausea and vomiting in pregnancy and is characterized by intractable nausea and vomiting that leads to dehydration, electrolyte and metabolic disturbances and nutritional deficiency requiring hospitalization.[1,3,4] Hyperemesis gravidarum occurs in approximately bg 0.32% of all pregnancies.[5,6,7] This is responsible for increased health care use, hospitalization; time lost from work and reduced quality of life during pregnancy.[8] The diagnosis of hyperemesis gravidarum rests in careful observation of signs and symptoms of patients with excessive vomiting. Symptoms of hyperemesis gravidarum typically present during first trimester, between 4th to 10th weeks of gestation peaking at 8th to 12th weeks and resolving by 20th week. Patients usually presents with signs of dehydration, ketosis, electrolyte and acid base disturbances.[9] The diagnosis of hyperemesis gravidarum should exclude other causes of vomiting such as gastroenteritis, cholecystitis, acute pancreatitis, pyelonephritis, hyperthyroidism or liver dysfunction.[10] The effect of nausea and vomiting of pregnancy on maternal and neonatal outcome has been controversial. Studies on hyperemesis gravidarum have shown conflicting results, with some reporting adverse neonatal outcome and others reporting a beneficial outcome.[11] This study aims to find out the maternal and fetal outcomes in women with history of hyperemesis gravidarum at Nepal Medical College and Teaching Hospital.

METHODS

This is a hospital based prospective study conducted at Nepal Medical College Teaching Hospital (NMCTH) in the Department of Obstetrics and Gynecology. This study was

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conducted over a period of 24 months from 1st Baisakh 2065 to 31st Chaitra 2066. The objective of this study was to evaluate maternal characteristics and to see maternal and fetal outcome of women admitted with hyperemesis gravidarum at NMCTH. All the patients admitted with the diagnosis of hyperemesis gravidarum over the study period were enrolled. The age of women, parity, and the gestational age, mode of treatment and duration of hospital stay were analyzed. After admission, complete blood count, liver function test, renal function test, urine routine analysis and urine culture and sensitivity were sent in all cases to see for other causes of vomiting. Urine for acetone was sent daily to see for presence and correction of ketonuria. Ultrasonography was routinely performed in all patients for viable intrauterine pregnancy and to rule out multiple gestation and hydatidiform mole which then were excluded from the study. The treatment of hyperemesis gravidarum was supportive. All the patients were kept nil per oral and managed with intravenous fluids (3 litres/24 hours), intravenous multivitamins and intravenous antiemetics. Metoclopromide was the antiemetic of choice. Intravenous fluids and medicines were continued till the nausea and vomiting subsided and ketonuria was corrected. Dry food was started when there was no more vomiting. Patient was considered cured and discharged from hospital once oral food was tolerated and ketonuria was corrected. These women were followed up throughout antenatal visits and after the delivery to look for fetal outcome. The fetal outcome evaluated included occurrence of preterm delivery, low birth weight, 5 minute Apgar score less than 7, and congenital anomalies.

RESULTS

There were 52 cases of hyperemesis gravidarum admitted to NMCTH during the study period. There were 2080 pregnant women admitted with various other reasons during the same period. Thus the incidence of hyperemesis gravidarum was 2.5 % of all pregnancies.

The incidence of hyperemesis gravidarum was higher in nulliparous women (61.5%) than in multiparous women (38.5%) as shown in table no 1.There were only 2 cases of hyperemesis in parity more than 3. The incidence of hyperemesis gravidarum decreases with increasing parity showing this to be a disease principally of nulliparous women.

Among 52 cases of hyperemesis gravidarum, 90.3% (n=47) were in 1st trimester and 9.7% (n=5) in 2nd trimester of pregnancy. The incidence of the disease was maximum i.e. 50% in gestational age 5-7 weeks showing this to be a disease of early pregnancy but this problem was identified in gestational age as late as 20 weeks also. (Table 2)

Blood biochemistry i.e. liver function test and kidney function test were performed in all cases and no abnormalities were detected. Ultrasonography was done in all patients and 52 cases of viable intrauterine pregnancies were found. There were no cases of multiple pregnancies and one patient found to have molar pregnancy was excluded from the study.

Table 1. Hyperemesis gravidarum and gravidity

Gravida	Number	Percentage
Primi	32	61.5
G2	10	19.3
G3	8	15.4
G5	2	3.8
Total	**52**	**100.0**

Table 2. Hyperemesis gravidarum and gestational age

Gestational age	Number	Percentage
1st trimester	**47**	**90.3**
5-7 weeks	26	50.0
8-10 weeks	17	32.7
11-12 weeks	4	7.6
2nd trimester	**5**	**9.7**
13-14 weeks	3	5.9
15-16 weeks	1	1.9
20 weeks	1	1.9

Table 3. Hyperemesis gravidarum and delivery outcome

Mode of delivery	Number	Percentage
Normal delivery	34	83.0
Preterm delivery	2	4.8
Cesarean section	5	12.2
Total	**41**	**100.0**

The treatment of hyperemesis gravidarum was supportive. Metoclopromide was the antiemetic of choice.There were six patients who had intractable vomiting not relieved with metoclopromide and were treated with alternative antiemetic drug ondansetron. Most of the patients were relieved with conservative management within 48 hours. Two patients who were not relieved even after 7 days of treatment chose to have termination of pregnancy. The elective termination rate was 3.7%.

The range of duration of hospital stay was 1-10 days with average of 2.26 days.

Among 52 women with history of hyperemesis gravidarum, delivery outcome could be traced in only 41 patients.

The delivery outcome of 41 women shows that 83% had normal delivery. There were two preterm delivery at 36 weeks. The preterm delivery rate was 4.8% and LSCS rate was 12.2% which were similar to general obstetric population. There were no low birth weight babies and the average birth weight was 3.1kg. All the babies had

apgar score more than 7 at 5 mins of birth. There were no congenital anomalies. No perinatal deaths were noted among fetus born to mothers with history of hyperemesis gravidarum. So overall, no adverse fetal outcome was noted among 41 women with history of hyperemesis gravidarum who had delivered at NMCTH.

DISCUSSION

The definition of hyperemesis gravidarum used in this study was similar to that proposed by Broussard *et al*, Abell *et al* and Nagestte *et al*.[1,3,4] The incidence of hyperemesis gravidarum was 2.5% in this study which is similar to that reported by Kallen *et al* , Goodwin and Tan where the incidence ranged from 0.3-2%.[5-7]

This study shows the incidence of the problem to be higher in nulliparous (61.5%) than in multiparous women (38.5%). The disease was rarely seen in women with parity more than three. This finding is similar to that reported by Tsang *et al*, where the disease was less commonly seen in women who were para three or more.[10]

Hyperemesis gravidarum is the disease primarily of early pregnancy but in some cases it may occur throughout pregnancy. In this study, 50% of cases were reported in the gestational age of 5-7 weeks but the problem was identified in gestational age as late as 20 weeks also. This is similar to that reported by Philip where the incidence was highest in gestational age of 8-12 weeks.[9] Similarly, Loh and Sinalingam reported the highest incidence in gestational age 4-7weeks showing hyperemesis gravidarum as disease of early pregnancy.[12]

In this study, the main treatment of hyperemesis was supportive care. In most patients, intravenous fluid therapy, vitamin supplementation, antiemetic and electrolyte imbalance correction were sufficient to relieve symptoms and prevent complications. The treatment was conservative and same as ours in studies conducted by Stuijvenberg *et al*, Godsey *et al*, Verberg *et al* and Eliakim *et al*.[13-16]

The duration of hospital stay is similar to that reported by Tsang where mean hospital stay was 1.8 days and by Paauw *et al* where mean hospital stay was 2.9 days.[9, 17]

In this study there were no low birth weight babies and the mean birth weight of the fetus was 3.1 kg. In the study conducted by Hallack *et al* in Michigan, the average birth weight was 3.11 kg which is similar to our study.[10] In another study conducted by James *et al,* the average birth weight was found to be 3.23 kg in women with hyperemesis gravidarum.[17]

No cases of congenital anomalies and perinatal deaths were noted in babies born to mothers with history of hyperemesis gravidarum in our study. Tsang *et al* also has reported no differences in pregnancy outcomes including mean birth weight, delivery less than 37 weeks, apgar score, perinatal mortality and incidence of fetal anomalies in patient with or without history of hyperemesis gravidarum[9]. Similar result was seen in another study conducted by Broussard *et al* where hyperemesis was not found to have adverse effect in the fetus. There were no significant difference in infants birth weight, apgar score at birth, perinatal mortality and congenital anomalies.[1] In another study conducted by Dodds *et al*, the pregnancy outcome in terms of low birth weight, preterm delivery, 5 min apgar score less than 7were not different in women with or without history of hyperemesis gravidarum.[18]

CONCLUSIONS

Hyperemesis gravidarum is severe form of nausea and vomiting of pregnancy and can have substantial effects on the mother and fetus if left untreated. But if appropriate treatment is offered on time, hyperemesis gravidarum itself does not seem to have adverse maternal and fetal outcome.

REFERENCES

1. Broussard C, Richter J. Nausea and vomiting of pregnancy. Gastroenterol Clin North Am.1998;27(1):123-51.
2. Safari H, Alsulyman O, Ghuman R, Goodwin T. Experience with oral methylprednisolone in treatment of refractory hyperemesis gravidarum. Am J Obstet Gynecol.1998;178(5):1054-8.
3. Abell T, Riely C. Hyperemesis gravidarum. Gastroenterol Clin North Am.1992;21(4):835-49.
4. Nageotte M, Briggs G, Towers C, Asrat T. Droperidol and dimenhydramine in management of hyperemesis gravidarum. Am J Obstet Gynecol 1996;174(6):1801-05.
5. Kallen B, Lundberg G, Aberg A. Relationship between vitamin use, smoking and nausea and vomiting of pregnancy. Acta Obstet Gynaecol Scand.2003;82:916-20.
6. Goodwin TM. Hyperemesis gravidarum. Clin Obstet Gynecol.1998; 41:597-605.
7. Tan PC, Omar SZ. Contemporary approaches to hyperemesis gravidarum during pregnancy. Curr Opin Obstet Gynecol.2011; 38(2):150-54.
8. Attard CL, Kohli MA, Coleman S, et al. The burden of illness of severe nausea vomiting of pregnancy in U.S. Am J Obstet Gynecol.2002; 186:220-7.
9. Philip B. Hyperemesis gravidarum: Literature review. WMJ.2003; 102(3):46-51.
10. Tsang IS, Katz VL, Wells SD. Maternal and fetal outcomes in hyperemesis gravidarum. Int J Obstet Gynecol.1996;55(3):231-5.
11. Hallack M, Tsalamandris K, Dombrowski MP, Isada MB, Pryde PG, Evans MI. Hyperemesis gravidarum: Effect on fetal outcome. J Reprod Med.1996;41:871-4.
12. Loh KY, Sivalingam N. Understanding hyperemesis gravidarum. Med J Malaysia.2005;60(3):394-9.
13. Van Stuijvenberg M, Schabort I, Labadarios D, Nel J. The nutritional status and treatment of patients with hyperemesis gravidarum. Am J Obstet Gynecol.1995;172(5):1585-91.
14. Godsey RK, Newman RB. Hyperemesis gravidarum: A comparison of single and multiple admissions. J Reprod Med.1991;36(4):287-90.
15. Verberg MFG, Gillott DJ, Al-fardan N, Grudzinskas JG. Hyperemesis gravidarum: A literature review. Hum Reprod Update.2005; 11(5):527-39.
16. Eliakim R, Abulafia O, Sherer DM. Hyperemesis gravidarum: A current review. Am J Perinatol.2000;17(4):207-18.
17. Paauw JD, Bierling S, Curtis RC, Davis AT. Hyperemesis gravidarum and fetal outcome. J Parenter Enterol Nutr.2005;29(2):93-6.
18. Dodds L, Fell D, Joseph KS, Allen VM, Butler B. Outcomes of pregnancies complicated by hyperemesis gravidarum. Obstet Gynecol.2006;107(2):285-92.