

Assessment of Risk Factors for Re-Hospitalisation in Patients with Hyperemesis Gravidarum

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Abstract: *The study was conducted in Father Muller Medical College hospital, Mangalore from November 2018 to August 2019 to assess re-hospitalisation in pregnant women with hyperemesis gravidarum by analysing the risk factors. During the 10 months study, 91 patients were admitted with complaints of hyperemesis among which 9 patients were re-hospitalised with same complaint. Readmission due to hyperemesis was more in women under the age of 30 years. Multiparous women and women in the early gestational age were at increased risk. Recurrence was more in 1st trimester.*

Keywords: hyperemesis gravidarum, re-hospitalisation, risk factors

1. Introduction

Hyperemesis gravidarum (HG) affects approximately 0.3-2% of pregnancies.[1] It is a condition defined by extreme nausea and vomiting during pregnancy including dehydration, electrolyte, fluid intake and metabolic disturbances as well as physical or mental fatigue. It can also have adverse effect on pregnant woman's quality of life and is associated with increase stress levels.

Hyperemesis gravidarum is the main cause for hospitalisation of pregnant women in the first half of pregnancy and between 19-30% of hospitalised women return for one or more hospitalisations in the same pregnancy. These hospitalisations create a burden on the health system and are associated with high health care costs. Risk factors for first time hospitalisation due to hyperemesis have been identified and include 1) age under 30; 2) additional medical conditions such as gastrointestinal diseases, asthma, diabetes, hyperthyroidism and mental illness; 3) past pregnancies with hyperemesis; 4) women in their first pregnancy; 5) multiple fetuses. [2]

There are a few studies regarding risk factors for re-hospitalization of women with hyperemesis gravidarum.

2. Aims and Objectives

To assess re-hospitalisation in pregnant women with hyperemesis gravidarum by analysing the risk factors.

3. Materials and Methods

The study was a prospective observational study. All the women who were hospitalised with hyperemesis gravidarum at FMMCH, Mangalore during November 2018 to August 2019 were included in the study. Informed consent was obtained and all patients were subjected to detailed history taking, general, systemic and obstetric examination.

Risk factors included are:

- 1) Age
- 2) Parity
- 3) Gestational age
- 4) Singleton or multifetal pregnancy
- 5) Serum TSH levels
- 6) Urine ketone bodies
- 7) Serum potassium levels
- 8) Length of hospital stay
- 9) Similar complaint in previous pregnancy.

Inclusion criteria:

- 1) Age group above 18years and above
- 2) Pregnant women below 20 weeks of gestation

Exclusion criteria:

- 1) Age group below 18 years
- 2) Pregnant women with gestational age more than 20weeks
- 3) Hyperemesis due to other conditions like anti cancer treatment, anti TB treatment.

The data was collected by taking the history from the patient and from lab investigation reports. Pregnant women who were admitted were later followed up for any readmission with same complaint. The data collected was analysed to assess the risk factors.

4. Result

The study was conducted between November 2018 to August 2019 for a duration of 10 months. All pregnant women who were admitted with complaint of hyperemesis were included in the study. The data was collected from 91 patients. All the pregnant women included in the study had a singleton pregnancy.

Majority of women included in the study were in the age of 20's (n=76, 83.5%). Most of the women were Primigravida (n= 44, 48%), Multipara (n= 39, 42%), Nullipara (n=8, 8%). Most women were under 10wk POG (n=57, 62%).

Among the total 91 patients, 9 patients (9.8%) were re-admitted with hyperemesis. Of the 9 patients majority of

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them were under the age of 30 years (n=7, 78%). Readmission was more in Multipara (n= 5, 55%) followed by Primigravida (n =3, 33%) and Nullipara(n=1, 11%). Serum TSH and serum potassium levels were almost normal in all patients. Mean length of hospital stay was 3.3 days with least LHS of 2 days and maximum LHS 9 days .Urine ketone bodies was positive in most(n=62,67%) of the admitted patients .Almost all readmission were in the 1st trimester(n =8, 88%).

Two patients (primigravida) admitted with hyperemesis were found to have gestational thyrotoxicosis, and 1 patient had hypokalemia, none of these patients were readmitted with hyperemesis.

Table 1: Re-hospitalisation

Total patients	Patients re- hospitalised	Re-hospitalisation (%)
91	9	9.8%

Table 2: Age distribution

Age (years)	Number of patients	Percentage
20- < 30	7	78%
>30	2	22%

Table 3: Parity

Parity	No of patients	Percentage
Primigravida	3	33%
Multipara	5	55%
Nullipara	1	11%

Table 4: Length of hospital stay

Length of hospital stay	No of patients	Percentage
1-3 days	66	72.5%
4-9 days	25	27.4%

Table 5: Period of gestation-POG

POG (weeks)	No of patients	Percentage
Upto 10 weeks	57	62.6%
>10 weeks	34	37.6%

5. Discussion

This prospective study was done with the objective to find the risk factors associated with re-hospitalisation of pregnant women with hyperemesis. Re-hospitalisation in the present study was 9.8%. Re-hospitalisation rate was 19.2-30% and 37.6% in the studies done by Zohar et al.

Most women in the study were hospitalised for more than 2 days and were at a significantly high risk for re-hospitalisation. Same results were found in the study done by Zohar et al in which women who were re- hospitalised had spent a greater number of days in hospital in their first hospitalisation.

Women who had experienced HG in the past were at increased risk of being hospitalised during their second pregnancy. Similar results were found in the study done in the past.

Low gestational length of pregnancy was found to be strong predictor for re-hospitalisation. Consistently, more studies

confirm a higher incidence rate of HG is in the first weeks of gestation and in the first trimester. {2}.

All women in the study were singleton pregnant and there was no multifetal pregnancy, hence no comment is made on comparing single and multiple foetuses being a risk factor for the condition. In study done by Fell D B et al, comparison was done between singleton and multiple fetal pregnancy and multifetal pregnant women were found to be at higher risk for re- hospitalisation with hyperemesis.

Liver function test was normal in all cases. Urine ketone bodies and serum potassium were not reliable indicators.

6. Conclusion

Readmission due to hyperemesis was more in women under the age of 30 years. Multiparous women were at increased risk for hyperemesis. Earlier the gestational age more was the risk of recurrence. Recurrence was more in 1st trimester and markedly decreased in 2nd trimester.

7. Limitations

- Small sample size and short study duration.
- Urine ketone bodies and serum potassium were not reliable indicators.

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