



Risk Factors Related to Gestational Trophoblastic Disease

Hafija Akter^{1*}, Minara Parveen², Salima Akter³, Tamima Akter⁴

¹Associate Professor, Department of Obstetrics & Gynecology, Uttara Adhunik Medical College & Hospital, Dhaka, Bangladesh.

Email: drhafija@gmail.com

Orcid ID: 0000-0002-5468-9160

²Registrar, Department of Obstetrics & Gynecology, Uttara Adhunik Medical College & Hospital, Dhaka, Bangladesh.

Email: minara.minu@gmail.com

Orcid ID: 0000-0003-1328-7939

³Assistant Registrar, Department of Obstetrics & Gynecology, Uttara Adhunik Medical College & Hospital, Dhaka, Bangladesh.

Email: SalimaShuli@gmail.com

Orcid ID: 0000-0002-9239-5112

⁴Assistant Registrar, Department of Obstetrics & Gynecology, Uttara Adhunik Medical College & Hospital, Dhaka, Bangladesh.

Email: tamima.akther1984@gmail.com

Orcid ID: 0000-0001-5067-8926

*Corresponding author

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Abstract

Background: Gestational trophoblastic diseases (GTD) consist of a group of neoplastic disorders arising from placental trophoblastic tissue after normal or abnormal fertilization. The WHO classification of GTD includes hydatidiform mole, invasive mole, choriocarcinoma, placental site trophoblastic tumor, and miscellaneous and unclassified trophoblastic lesions. This study aimed to analyze the risk factors related to the gestational trophoblastic disease. **Material & Methods:** This prospective study was conducted at the Department of Obstetrics & Gynecology in Uttara Adhunik Medical College & Hospital, Dhaka, Bangladesh for 1 year; from April 2020 to March 2021. A total of 100 subjects were included in this study. Informed written consent was taken from the study subjects. Data was collected using a pre-formed data sheet. Data processing and analysis were done by using SPSS version 17. The test statistics used to analyze the data were descriptive statistics, the McNemar Chi-square test, and Repeated Measure ANOVA statistics. All patients underwent necessary investigations. All information was kept confidential and used only for this study purpose. The ethical Clearance Certificate was obtained from Bangladesh Medical College. **Results:** The majority of the patients were more than of 38 years age (53, 53.0%). Out of these patients, 50 (50.0%) were para one, while 40 (40.0%) were para more than four, most of the patients (63, 63.9%) were illiterate and 5 (5.0%) were graduates, most of the subjects (73, 73.0%) belonged to the low socioeconomic group. The most common presenting symptom was bleeding per vagina (35, 35.0%) followed by pain in the lower abdomen (24, 24.0%), the passage of moles (16, 16.0%), hyperemesis gravidarum (14, 14.0%) and dyspnea in 11 (11.0%) subjects. **Conclusion:** The disease was common in extremes of ages, low para, and grand multiparous women. The hydatidiform mole was the commonest type of trophoblastic disease in these patients. The most common presenting complaint was bleeding per vagina followed by pain in the lower abdomen. The hydatidiform mole was diagnosed in 65 (65.0%) patients, the invasive mole in 28 subjects (28.0%), and choriocarcinoma in 7 (7.0%) patients. No patient had a placental site trophoblastic tumor.

Keywords:- Gestation, Trophoblast, HCG, Hydatidiform mole.

INTRODUCTION

Gestational trophoblastic diseases (GTD) consist of a group of neoplastic disorders arising from placental trophoblastic tissue after normal or abnormal fertilization. The WHO classification of GTD includes hydatidiform mole, invasive mole, choriocarcinoma, placental site trophoblastic tumor, and miscellaneous and unclassified trophoblastic lesions.^[1] Gestational Trophoblastic Disease (GTD) is defined as a heterogeneous group of interrelated lesions arising from the trophoblastic epithelium of the placenta after abnormal fertilization. It includes various lesions such as pre-malignant lesions including hydatidiform mole (partial and complete type), while malignant lesions (gestational trophoblastic neoplasm) comprise invasive mole, choriocarcinoma, PSTT, and epithelioid trophoblastic tumor.^[2] Molar pregnancy is now categorized as complete or partial based on gross and microscopic histopathologic and karyotypic findings. Early detection of persistent gestational trophoblastic tumor (GTT) depends on careful postmolar gonadotropin follow-up and consideration of the diagnosis for any woman of reproductive age with unexplained gynecologic and/or systemic symptoms.^[3] The earlier diagnosis of a complete mole was associated with more subtle pathologic findings than later molar pregnancy. The use of immunohistochemical techniques for the detection of maternally imprinted genes as ancillary testing in the diagnosis of a complete and partial mole is therefore increasing. Although most molar pregnancies are sporadic, a familial syndrome of a recurrent hydatidiform mole has been described.^[4] The hydatidiform mole appears to be caused by abnormal gametogenesis and fertilization. Age, ethnicity,

and history of hydatidiform mole appear to be important risk factors for hydatidiform mole. Age, ethnicity, a history of a hydatidiform mole or fetal wastage, and ABO blood group interactions appear to be important risk factors for choriocarcinoma.^[5] Factors found not to be associated with disease included contraceptive history, irradiation, ABO blood group, and smoking factors of the male partner.^[6] The incidence of GTD varies in different parts of the world, for example, in Japan, the incidence is 2/1000 deliveries while in Malaysia, the incidence of molar pregnancy and gestational trophoblastic neoplasia is 2.8/1000 and 1.59/1000 deliveries respectively.^{2,3} Meanwhile, in North America, its incidence is reported up to 2.5/1000 pregnancies.⁴ Highest incidence of 12.1/1000 deliveries is reported from Turkey.^[5] The malignant potential of this disease is higher in South East Asia where it is as high as 10- 15% in comparison to 2-4% in western countries.^[7] Gestational Trophoblastic Disease (GTD) is characterized by the secretion of a distinct tumor marker, the β -HCG. This condition is curable even in the presence of metastasis. The major well-established risk factors for the disease are advanced maternal age and a history of GTD.^[8] Since this group of disorders is now one of the highly curable neoplasms, early diagnosis and prompt treatment are necessary. The rates of GTD are decreasing and survival has dramatically improved in different parts of the world.^[9] This study aimed to assess the risk factors associated with the gestational trophoblastic disease.

Objective

General Objective

- To assess the risk factors associated with the gestational trophoblastic disease.

Specific Objective

- To see the common gestational trophoblastic diseases.

- Patients who had given consent to participate in the study.

Exclusion Criteria

- Patients who did not give consent to participate in the study.
- Patients with chronic diseases.

MATERIAL AND METHODS

This prospective study was conducted at the Department of Obstetrics & Gynecology in Uttara Adhunik Medical College & Hospital, Dhaka, Bangladesh for 1 year; from April 2020 to March 2021. A total of 100 subjects were included in this study. Informed written consent was taken from the study subjects. Data was collected using a pre-formed data sheet. Data processing and analysis were done by using SPSS version 17. The test statistics used to analyze the data were descriptive statistics, the McNemar Chi-square test, and Repeated Measure ANOVA statistics. All patients underwent necessary investigations. All information was kept confidential and used only for this study purpose. The ethical Clearance Certificate was obtained from Bangladesh Medical College.

Inclusion Criteria

- Patients diagnosed with GTD.

RESULTS

The majority of the patients were more than 38 years age (53, 53.0%). Out of these patients, 50 (50.0%) were para one, while 40 (40.0%) were para more than four, most of the patients (63, 63.9%) were illiterate and 5 (5.0%) were graduates, most of the subjects (73, 73.0%) belonged to the low socioeconomic group [Table 1].

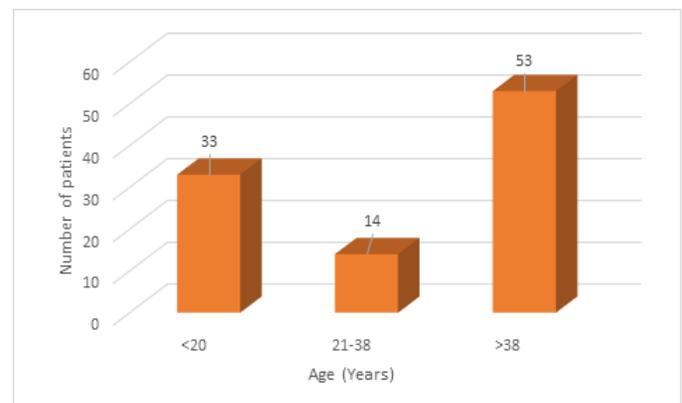


Figure 1: Age distribution of study subjects (N=100)

Table 1: Socio-demographic data of the respondents (N=100).

Parameters	N	%
Age (years)		
<20	33	33.0
21-38	14	14.0
>38	53	53.0
Parity		



0-1	50	50.0
2-4	10	10.0
>4	40	40.0
Education		
Illiterate	63	63.0
Primary	26	26.0
Secondary	6	6.0
Graduate	5	5.0
Socio-economic condition		
Low	73	73.0
Middle	23	23.0
High	4	4.0

Table 2: Clinical presentation of the study subjects (N=100).

Presentation	N	%
Bleeding P/V	35	35.0
Pain in the lower abdomen	24	24.0
Passage of moles	16	16.0
Hyperemesis gravidarum	14	14.0
Dyspnea	11	11.0

The most common presenting symptom was bleeding per vagina (35, 35.0%) followed by pain in the lower abdomen (24, 24.0%), the passage of moles (16, 16.0%), hyperemesis gravidarum (14, 14.0%) and dyspnea in 11 (11.0%) subjects. [Table 2]

Table 3: Type of gestational trophoblastic disease (N=100)

Type of GTD	N	%
Hydatidiform mole	65	65.0
Invasive mole	28	28.0
choriocarcinoma	07	7.0
placental site trophoblastic tumor	00	0.0

The hydatidiform mole was diagnosed in 65 (65.0%) patients, the invasive mole in 28 subjects (28.0%), and choriocarcinoma in 7 (7.0%) patients. No patient had a placental site trophoblastic tumor. [Table 3]

Hydatidiform mole affects 1-3 in every 1000 pregnancies. These are abnormal conceptions with excessive placental, and little or no fetal, development. The two major types; complete and partial—have distinctive histological and genetic features.^[10] In this study majority of the patients were more than of 38 years age (53, 53.0%). Out of these patients, 50 (50.0%) were para one, while 40 (40.0%) were para more than

DISCUSSION



four, most of the patients (63, 63.9%) were illiterate and 5 (5.0%) were graduates, most of the subjects (73, 73.0%) belonged to the low socioeconomic group. Hydatidiform moles affect women throughout the reproductive age range but are more common at the extremes of the range.⁸ Women under 16 have a six times higher risk of developing the disease.^[10] The age distribution of the present study was quite similar to another study.^[7] Sixty-four women with GTD were included in another study with a mean age of 31.0 ± 7.5 years, mean gravidity of 4.0, and parity of 2.0. The prevalence of GTD was 0.3% (one in 386 births), and the most common risk factors were increased maternal age and multiparity.^[11] It was consistent with the findings of studies from Singapore.^[12] Another study stated that the high incidence in Asia is generally attributed to low socioeconomic status and malnutrition.^[13] In this study, most of the patients (63, 63.9%) were illiterate and 5 (5.0%) were graduates, most of the subjects (73, 73.0%) belonged to the low socioeconomic group which was quite relatable. The available evidence suggests that hydatidiform mole arises as a consequence of defective ova. It is premature in young and post-mature in old ages. Antecedent pregnancy in invasive mole was hydatidiform mole while in choriocarcinoma both the patients had full-term pregnancy one year back.^[14] Vaginal bleeding was the most common presenting symptom in this study and it was also reported by other studies.^[15,16] Some other authors have also reported the same findings.^[17]

Choriocarcinoma is a potentially fatal disease but the current management protocol has turned the prognosis highly favorable. A study has also reported a cure rate of 80%.^[18]

Limitations of The Study

The study was conducted in a single hospital with a small sample size. So, the results may not represent the whole community.

CONCLUSIONS

The present study found that age and parity can be significant risk factors since the disease was common in extremes of ages (<20 & > 38 years), low para, and grand multiparous women. The hydatidiform mole was the commonest type of trophoblastic disease in these patients.

Recommendation

In these patients, emphasis should be given to detect the disease in its early stage to decrease the mortality and morbidity from this condition, follow-up should include serial estimations of the hCG level, which can initially be done on serum and urine samples and then done on urine samples alone. To confirm that the disease is in remission and to minimize the chance of teratogenicity in a subsequent pregnancy, many authors recommend that patients who receive chemotherapy for GTD should not become pregnant for 12 months after the end of treatment. Moreover, further studies should be conducted involving a large sample size and multiple centers.



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