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Profiling Molar Pregnancy: Demographic and Clinical Insights at a Tertiary Care Hospital in Bangladesh

Rafaa Islam[1], Dilip Kumar Bhowmik[2]
[1] *Department of Obstetrics & Gyne, Alliance Hospital*
[2]*Department of Obstetrics & Gyne, Parkview Medical College*

Abstract:
Background: *Molar pregnancy, a subtype of gestational trophoblastic disease, is prevalent in Southeast Asia, including Bangladesh, where socioeconomic and healthcare limitations exacerbate its impact. This study aimed to profile the demographic and clinical characteristics of molar pregnancy cases at a tertiary care hospital in Bangladesh, providing insights into risk factors, clinical presentations, and associated outcomes.*
Methods: *A cross-sectional observational study was conducted over six months (July–December 2017) at Sylhet MAG Osmani Medical College & Hospital. Fifty patients diagnosed with molar pregnancy were selected through purposive sampling. Comprehensive data collection included demographic, clinical, and obstetric histories. Descriptive and inferential statistical analyses were performed using SPSS software, with results presented as frequencies, percentages, and means. Statistical significance was set at $p<0.05$.*
Results: *The mean age of patients was 25.40 years (SD ±8.24), with 58% aged 21–35 years. Most were housewives (76%), with 32% from lower economic classes. Clinical presentations included per-vaginal bleeding (78%), exaggerated pregnancy signs (34%), and early pre-eclampsia (22%). Gravidity analysis showed 42% were primigravida and 58% multigravida, while 64% presented after 13 weeks of amenorrhea. Contraceptive use was reported by 68%, predominantly oral contraceptives (36%). Dietary analysis revealed animal protein as the most common daily intake (54%). Blood group analysis showed A+ as the most frequent among patients (44%), while O+ predominated among partners (34%).*
Conclusion: *Molar pregnancy primarily affects women of reproductive age from socioeconomically disadvantaged groups. Late presentations with advanced symptoms highlight challenges in early detection and management. Improved awareness, enhanced diagnostic facilities, and targeted public health interventions are necessary to mitigate the burden of molar pregnancy in Bangladesh.*
Keywords: *Molar Pregnancy, Gestational Trophoblastic Disease, Socioeconomic Factors, Gravidity, Preeclampsia, Vaginal Bleeding, Bangladesh.*

I. Introduction

Molar pregnancy, a subtype of gestational trophoblastic disease (GTD), involves the abnormal proliferation of trophoblastic tissue within the uterus, resulting in a non-viable pregnancy [1]. This condition is clinically significant due to its potential to develop into persistent gestational trophoblastic neoplasia (GTN) and, in rare cases, progress to choriocarcinoma, a malignant form of GTD [2]. Early and accurate diagnosis, followed by timely management, is critical to preventing these severe complications [3].

Globally, the incidence of molar pregnancy demonstrates significant variability, influenced by geographic, socioeconomic, and genetic factors. Regions such as Southeast Asia and Latin America report higher incidences compared to Western countries, a disparity often attributed to environmental, nutritional, and healthcare-related factors [4,5]. Bangladesh, situated in a high-incidence region, grapples with unique challenges in managing molar pregnancies. These include delayed diagnoses due to insufficient access to specialized healthcare services, particularly in rural and underserved areas. Such delays often result in advanced disease stages at presentation, negatively impacting patient outcomes [6].

Risk factors such as maternal age, reproductive history, and socioeconomic status are well-documented [7]. Women under 20 or over 40 years of age, and those with a history of molar pregnancy or recurrent miscarriages, are particularly vulnerable [8]. However, in Bangladesh, additional factors like limited awareness of GTD among healthcare providers, inadequate maternal nutrition, and poor health-seeking behaviors contribute to the problem [9]. Many patients, especially those in rural areas, are unaware of the symptoms associated with molar pregnancy, leading to delayed presentations. Healthcare providers, on the other hand, may face challenges due to the absence of advanced diagnostic facilities, which are crucial for identifying and managing the condition effectively. Clinically, molar pregnancy can present with symptoms similar to other pregnancy complications, such as abnormal uterine bleeding, excessive nausea and vomiting (hyperemesis gravidarum), and uterine enlargement that is disproportionate to gestational age [10]. Severe cases may feature hyperthyroidism or preeclampsia-like symptoms appearing early in gestation [11,12].

Despite these challenges, data on the local epidemiology and clinical characteristics of molar pregnancy in high-incidence regions like Bangladesh remain scarce, hindering the development of targeted interventions. Recognizing these gaps, this study aims to explore the demographic and clinical characteristics of patients with molar pregnancy at a tertiary care hospital in Bangladesh. By identifying common risk factors and diagnostic patterns, the findings can inform healthcare policies and interventions to improve early detection and management of molar pregnancies, ultimately enhancing patient outcomes.

II. Material and Methods

Study Design and settings

This study was designed as a cross-sectional observational investigation. The research was conducted in the Department of Obstetrics & Gynecology at Sylhet MAG Osmani Medical College & Hospital, a leading tertiary care institution. The study spanned a period of six months, from July 1, 2017, to December 31, 2017.

Study Population

The study population included all patients diagnosed with molar pregnancy, regardless of their history of prior suction evacuation and curettage, who were admitted to Sylhet MAG Osmani Medical College & Hospital during the study period. In contrast, women with multiple pregnancies, ectopic pregnancies, missed abortions, or fibroids; cases involving metastatic trophoblastic disease; and diagnosed cases of choriocarcinoma, invasive mole, or placental site trophoblastic tumor were excluded from the study.

Sampling Method and Sample Size

A purposive sampling method was utilized to select participants, which was appropriate given the study's constraints. Limited resources, access to eligible patients, low patient availability, and logistical challenges influenced this choice, ensuring the feasibility of data collection within the six-month study period.

The initial sample size was determined using Guilford-Frucher's formula, which assumes a 50% prevalence of molar pregnancy, with a 5% level of significance (95% confidence interval) and a 10% margin of error. The calculated sample size was subsequently adjusted to 50 participants due to these practical limitations, ensuring that the sample was representative of the available patient population during the study period.

Study Procedure

Upon admission, all patients diagnosed with molar pregnancy underwent a comprehensive assessment that included blood tests, ultrasound, and laboratory investigations, including measurements of beta hCG levels in line with established clinical protocols. Comprehensive data collection encompassed demographic details, clinical presentations, management histories, and outcomes. Data were systematically recorded to ensure consistency and reliability.

After obtaining informed written consent from each patient, face-to-face interviews were conducted using a structured questionnaire that focused on antenatal checkups and the history of present and past pregnancies. A pilot study was conducted to identify and address potential sources of bias prior to the main data collection. Two dedicated and trained physicians collected the data, which included information on age, parity, menstrual and obstetric history, education and economic status, as well as blood group. Additionally, the blood groups of the couples were recorded. The data were analyzed using SPSS 22 statistical software.

Data Processing and Analysis

Collected data were processed using standard statistical software to ensure accuracy and reliability. The data were cleaned, coded, and entered into a statistical analysis program for further examination. Descriptive statistics were employed to summarize demographic and clinical characteristics, with results presented in the form of frequencies, percentages, and means where applicable. The results were carefully interpreted to provide meaningful insights into the demographic and clinical profiles of patients with molar pregnancy, aiming to support better clinical decision-making and maternal care strategies.

Ethical Consideration

Prior to the commencement of the study, ethical approval was obtained from the Ethical Review Committee (ERC) of Sylhet MAG Osmani Medical College & Hospital (SOMCH). Informed consent was secured from all participants after thoroughly explaining the study's objectives, purpose, and procedures. Participants were assured of their right to withdraw from the study at any time without any repercussions. Confidentiality of all collected data was strictly maintained, ensuring that personal information was protected. The researcher personally conducted all physical examinations to ensure consistency and professionalism. Patients who declined to participate were respectfully excluded from the study.

III. Results

This retrospective observational study included 50 patients with molar pregnancy who were treated at a tertiary care hospital. The mean age of the patients was 25.40 ± 8.24 years, with an age range of 16 to 47 years.

Table 1: Demographic Characteristics of Patients with Molar Pregnancy (n=50)

Variables	n=50	%
Age Group (in years)		
Less than 21	14	28
21-35	29	58
Greater than 35	7	14
Education		
Well educated	29	58
Literate	10	20
Illiterate	11	22
Occupation		
Housewife	38	76
Govt. Employees	5	10
NGO Workers	4	8
Student	3	6
Economic Class	5	10
Upper Class		
Higher-Middle Class	15	30
Lower-Middle Class	14	28
Lower Class	16	32

This study conducted on 50 patients with molar pregnancy at a tertiary care hospital revealed a mean age of 25.40 years (SD ±8.24), with an age range spanning from 16 to 47 years. Most patients (58%) were within the 21-35 age group, followed by 28% under 21 and 14% over 35. Educational attainment varied, with 58% being well educated (college level or higher), 20% having basic literacy, able to read and write and 22% being illiterate, unable to read or write. The majority of the patients (76%) were housewives, while smaller groups included government employees (10%), NGO workers (8%), and students (6%). Economically, 32% were classified as lower class, 28% as lower-middle class, 30% as higher-middle class, and 10% as upper class (Table 1).

Table 2: Marriage Frequency and Obstetric Features of Patients with Molar Pregnancy (n=50)

Variables	n=50	%
Marriage frequency		
Once	47	94
More than Once	3	6
Gravidity	21	42
Primigravida		
Multigravida	29	58
Parity	21	42
Nullipara		
Primipara	17	34
Multipara	12	24
Duration of amenorrhea (in week)	18	36
Less than13		
On or Above 13	32	64
Mean amenorrhea ±SD (in weeks)	16.22±8.06 (range 7 – 32)	
History of miscarriage	4	8
History of infertility	2	4

Among the 50 patients, 94% had been married only once, while 6% reported multiple marriages. Gravidity data showed that 42% were primigravida, with the majority (58%) being multigravida. Parity distribution indicated 42% were nullipara, 34% were primipara, and 24% were multipara. The duration of amenorrhea was on or above 13 weeks in 64% of cases, with the remaining 36% presenting with less than 13 weeks. The mean duration of amenorrhea was 16.22 weeks (SD ±8.06), ranging from 7 to 32 weeks. A history of miscarriage was noted in 8% of patients, and 4% reported a history of infertility (Table 2).

Table 3: Important Relevant history of Patients with Molar Pregnancy (n=50)

Variables	n=50	%
Contraceptive history	18	36
Oral contraceptive pill		
Injectable contraceptives	6	12
Intra-uterine copper device	5	10
Barrier method	5	10
History of molar pregnancy	3	6
Family history of molar pregnancy	2	4

Among the study participants, 68% reported a history of contraceptive use. Notably, oral contraceptive pills were the most common, used by 36% of patients. Injectable contraceptives were reported by 12%, while intrauterine copper devices and barrier methods were each reported by 10% of patients. Additionally, 6% of the participants had a personal history of molar pregnancy, and 4% reported a family history of the condition (Table 3).

Table 4.Food habit of the Patients with Molar Pregnancy (n=50)

Daily intake of-	n=50	%
Vegetable	19	38
Animal Protein	27	54
Fruits	20	40

The dietary habits of patients with molar pregnancy (n=50) revealed that 54% reported a daily intake of animal protein, 40% consumed fruits daily, and 38% included vegetables in their daily diet. These findings suggest that animal protein intake predominates over fruit and vegetable consumption in the dietary patterns of the patients (Table 4).

Table 5: Blood group of the Patients with Molar Pregnancy (n=50) and Their Partners (n=50)

Blood group	Patient n (%)	Partner n (%)
A +	22 (44)	15 (30)
B +	16 (32)	10 (20)
O+	6 (12)	17 (34)
AB+	3 (6)	4 (8)
B -	2 (4)	1 (2)
O -	1 (2)	2 (4)
AB -	0	1 (2)

Analysis of blood group distribution among patients with molar pregnancy (n=50) and their partners (n=50) showed that the most common blood group among patients was A+ (44%), followed by B+ (32%), O+ (12%), and AB+ (6%). Rare blood types included B− (4%) and O− (2%), with no cases of AB−. Among partners, O+ was the most prevalent (34%), followed by A+ (30%), B+ (20%), AB+ (8%), and less common types including O− (4%), B- (2%), and AB- (2%). These results indicate a varied distribution of blood groups, with A+ and O+ being the most frequent among patients and partners, respectively (Table 5).

Table 6: Clinical Presentations of Patients with Molar Pregnancy

Clinical presentations among patients with molar pregnancy revealed that per-vaginal bleeding was the most common symptom, occurring in 78% of cases. Other notable presentations included exaggerated signs of pregnancy (34%), early pre-eclampsia (22%), and lower abdominal pain (20%). A small percentage (4%) experienced the per-vaginal passage of vesicles. These findings highlight the predominant symptoms and clinical features observed in patients with molar pregnancy (Figure 1).

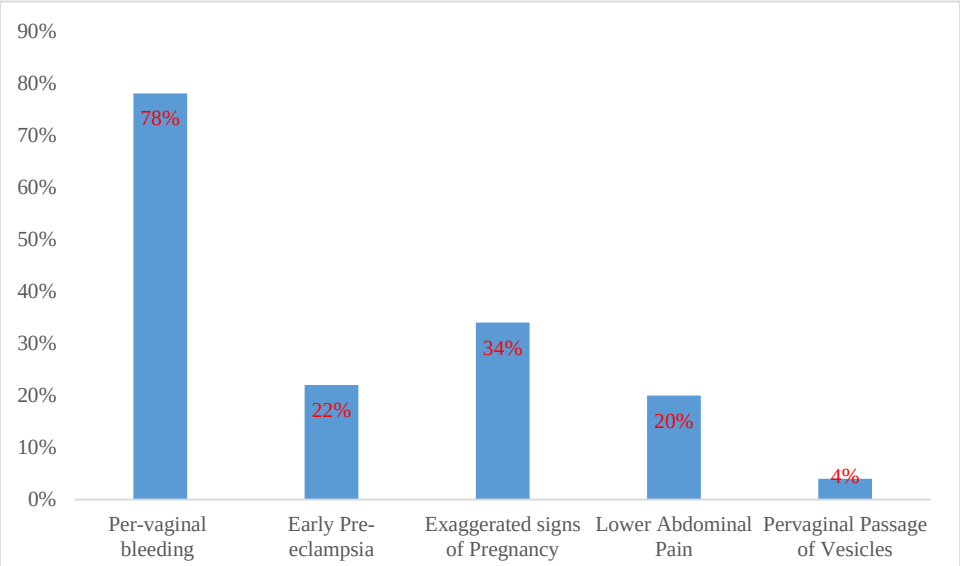

Figure 1: Clinical Presentations of Patients with Molar Pregnancy

IV. Discussion

This study highlights the demographic and socioeconomic characteristics of patients with molar pregnancy at a tertiary care hospital. The mean age was 25.40 years (SD ±8.24), with 58% in the 21-35 age group, aligning with other studies that show molar pregnancy predominantly affects women in their twenties and early thirties [7,13]. However, this differs from a study conducted at Rajshahi Medical College, Bangladesh, where a higher prevalence was seen in younger age groups (<20 years) [8]. This age distribution underscores the need for targeted reproductive health education and screening for early diagnosis.

Educational attainment showed that 58% of patients were well educated, contrasting with studies in lower-income regions where lower educational levels were common [8]. This could reflect the hospital's catchment area, which may include urban or semi-urban populations. However, the 22% illiteracy rate indicates ongoing educational disparities that can influence health-seeking behavior in Sylhet region.

The majority of patients (76%) were housewives, consistent with cultural norms in similar contexts where women's workforce participation is limited [14]. Understanding occupational roles is crucial as they can impact access to healthcare, especially where household responsibilities take priority.

Economic status revealed that 32% of participants were lower class and 28% were lower-middle class. Unlike the findings from Rajshahi Medical College, Bangladesh, where most cases came from lower socioeconomic backgrounds (58.4%), our study showed a significantly smaller proportion from the lower class (32%). This difference may indicate variations in healthcare access or cultural factors, linking socioeconomic challenges to molar pregnancy[6]. Economic constraints can lead to delays in seeking medical care. Only 10% of patients were from the upper class, highlighting the potential influence of socioeconomic status on disease management. Addressing these disparities requires policy interventions to improve financial access to reproductive healthcare.

The intersection of education, occupation, and economic class presents a comprehensive view of the sociodemographic profile. Despite 58% being well educated, many still faced economic hardships, suggesting that education alone does not mitigate economic barriers. This underscores the need for public health strategies combining educational outreach with economic support.

The analysis of marital, obstetric, and contraceptive histories among patients with molar pregnancy provides insights into potential risk factors and demographic trends.

Among 50 patients, 94% were married once, and 6% had multiple marriages, suggesting minimal influence of marriage frequency on molar pregnancy risk. Gravidity data showed 42% were primigravida and 58% multigravida, supporting findings that multigravida women may face higher risk due to cumulative gestational exposure [15].

Parity analysis revealed 42% were nullipara, 34% primipara, and 24% multipara. This indicates molar pregnancy affects women irrespective of childbirth history, aligning with studies showing that nulliparous and primiparous women are not exempt [16]. Amenorrhea duration was ≥13 weeks in 64% of cases, with a mean of 16.22 weeks (SD ±8.06), indicating potential delays in symptom recognition and diagnosis [17].

A history of miscarriage was noted in 8% of cases, and 4% had infertility history. These findings align with literature suggesting reproductive challenges may predispose to molar pregnancy due to hormonal or anatomical factors [18]. However, these factors appear to contribute to only a minority of cases.

Contraceptive use was reported by 68% of patients, with oral contraceptives being the most common (36%), followed by injectable contraceptives (12%), intrauterine devices (10%), and barrier methods (10%). The potential link between oral contraceptive use and molar pregnancy remains debated, with some studies indicating hormonal effects on trophoblastic tissue and others showing no significant correlation [19]([20]. The notable contraceptive use observed here highlights the need for further investigation.

In our study, 6% of patients had a personal history of molar pregnancy, and 4% had a family history. However, this differs from the global average, where 1 in 100 patients experiences a repeat molar pregnancy, with a higher prevalence observed among Bangladeshi patients [21].

In our study, the dietary habits of patients with molar pregnancy indicate a predominance of animal protein consumption, with 54% of participants reporting daily intake, compared to 40% for fruits and 38% for vegetables. These findings suggest a higher reliance on protein sources over fruits and vegetables. This pattern may reflect dietary preferences or availability and could potentially play a role in nutritional influences related to gestational trophoblastic disease. Where similar trend was found in the previous study conducted in Italy [22].

Research on dietary impacts on pregnancy outcomes has shown mixed results, indicating the need for further investigation into specific dietary components and their role in molar pregnancies.

Blood group analysis revealed that the most common blood type among patients was A+ (44%), followed by B+ (32%), O+ (12%), and AB+ (6%). Among partners, O+ was the most prevalent (34%), followed by A+ (30%) and B+ (20%). These results highlight differing distributions, with A+ predominance in patients and O+ in partners. Other studies have indicated that blood groups ABO may influence susceptibility to certain pregnancy complications, though direct associations with molar pregnancy are not definitive [23]. The presence of diverse blood types among patients and their partners may highlight the complex interplay of genetic and immunological factors that could influence the risk of molar pregnancy. However, there is limited information regarding the blood group distribution of a patient's partner or husband in relation to the patient's molar pregnancy. This indicates a need for further investigation into the combined blood groups and their role in molar pregnancies.

In the current study, per-vaginal bleeding was the most frequently reported clinical symptom, present in 78% of cases. This aligns with findings from a study in Rajshahi, where 64% of patients reported similar symptoms[6]. However, this contrasts with data from Pakistan, where per-vaginal bleeding was reported as the most common symptom in as high as 94% of cases [24]. Other notable clinical features included exaggerated signs of pregnancy (34%), early pre-eclampsia (22%), and lower abdominal pain (20%). The per-vaginal passage of vesicles was rare, occurring in only 4% of cases, consistent with reports indicating it as a less common yet distinctive sign of molar pregnancy (6). The spectrum of symptoms emphasizes the importance of prompt clinical assessment and diagnosis for effective management and improved outcomes.

V. Conclusion

The study highlights that molar pregnancy is associated with diverse demographic, reproductive, dietary, and clinical factors. Key findings include the predominance of multigravida status, significant dietary habits featuring high animal protein intake, and varied blood group distribution. Clinical symptoms were predominantly per-vaginal bleeding. This underscores the importance of early recognition, dietary counseling, and personalized patient management strategies. Further research is recommended to explore these associations in greater depth to enhance preventive and diagnostic approaches.

VI. Limitation

This study has several limitations that should be considered. First, the sample size of 50 patients, while informative, limits the generalizability of the findings to broader populations. Second, the study's retrospective nature may introduce bias related to the accuracy and completeness of medical records. Third, dietary habits and clinical characteristics were self-reported, which can be subject to recall bias and may affect the reliability of the data. Future research with larger, prospective cohorts and more controlled variables is needed to confirm these findings and provide more comprehensive insights into molar pregnancy risk factors and clinical presentations.

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