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Examine the Factors Influencing the Occurrence of Molar Pregnancies Among Women Attending in Tertiary Care PMC Hospital, Nawabshah

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ABSTRACT

Introduction: Hydatidiform mole problems, particularly the emergence of invasive forms, may have a significant impact on women's health in underdeveloped areas. The clinical and epidemiological research suggests that HM is a public health concern. The prevalence of molar pregnancy has been recorded in a variety of target populations and geographical locations. One out of every 45 live births was reported to have GTD in a Sindhi tertiary hospital. **Objectives:** To determine the frequency of factors leading to hydatidiform mole among pregnant women. **Study design:** Descriptive, cross-sectional study. **Setting:** People's University of Medical and Health Sciences for Women, Shaheed Benazirabad, Sindh. **Duration of study:** January 2025 to June 2025. **Materials & Methods:** One hundred women with HM between the ages of 18 and 45 were enrolled. Patients who had hypertension or any other type of cancer in any part of their body were not included. We collected their demographic information, such as age, length of time since marriage, and history of using oral contraceptive pills (OCPs). They had their risk factors evaluated. **Results:** The study's participants ranged in age from 18 to 45, with a mean age of 29.50 ± 5.71 years. Of the 57 patients, the majority (57.0%) were in the 18–30 age range. Age >40 years (5.0%), parity >2 (22.0%), history of prior mole (5.0%), and cousin marriage (23.0%), according to my research, are the factors that contribute to hydatidiform moles in pregnant women. **Conclusion:** Age >40 years (5.0%), parity >2 (22.0%), history of prior mole (5.0%), and cousin marriage (23.0%) are characteristics that contribute to hydatidiform mole in pregnant women, according to the study's findings.

INTRODUCTION

The most benign of a range known as Gestational Trophoblastic Disease (GTD) is Hydatidiform Mole (HM), a precancerous disease. Through the development of aberrant fertilization and placenta, it takes place during conception and alters the course and result of pregnancy. The possibility of it developing into Gestational Trophoblastic Neoplasia (GTN) is more significant. In actuality, HM is the most frequent (more than 50%) cause of GTN. It is obvious that the mother's survival depends on disease management, which includes prevention, early diagnosis, and HM follow-up.[1,2]

The incidence of molar pregnancies varies greatly by area, according to epidemiologic studies. While research in Southeast Asia and Japan has revealed an incidence rate as high as 2.0 per 1000 pregnancies, estimates from studies in North America, Europe, Australia, and New Zealand have shown incidence rates ranging from 0.57 to 1.1 per 1000 pregnancies. Rather than actual incidence disparities, these claimed variations can be the result of inconsistent data collecting and reporting practices.[3] However, these reported variations in incidence rates may also be due to dietary and socioeconomic factors rather than genetic or cultural ones. The rising western diet and rising standard of life have been blamed for Asia's declining rate of molar pregnancies. For both whole and partial moles, the overall incidence of molar pregnancies in the US and Europe is roughly 1/1000 pregnancies.[2]

This type of pregnancy prevents the placenta's natural vascularization from developing, and in certain instances, it develops into malignant diseases such choriocarcinoma, invasive moles, and trophoblastic tumors in the placenta. Years after the initial HM, choriocarcinoma may still affect a woman's health. It can be identified by signs and symptoms of brain metastases, including as paralysis, headache discomfort, and convulsions. It is possible for metastatic lesions to affect the lungs and show lung involvement.[4]

HM problems, particularly the emergence of invasive forms, may have a significant impact on women's health in

underdeveloped areas. The clinical and epidemiological research suggests that HM is a public health concern.[5] The prevalence of molar pregnancy has been recorded in a variety of target populations and geographical locations. One out of every 45 live births was found to have GTD in a Sindhi tertiary hospital.[6,7]

Risk factors such as mother age >40 years was discovered in 4 patients (5.8%), parity >2 in 14 patients (20%), cousin marriage in 13 patients (18.6%), and prior history of HM in 3 patients (4.3%), according to an Iranian study that included 70 patients with HM.[8]

This investigation was justified by the fact that HM is a potentially malignant illness that, if left untreated, could have serious consequences for female patients. However, as prevention is preferable to treatment, it is very helpful to identify risk factors in our patients so that we may provide them with the appropriate guidance and, if possible, prevent them. We can better educate our patients if we are aware of the risk factors for HM. Despite the importance of the subject, there isn't much literature from the past five years from our region of the world. Although some risk variables have been found to be common in foreign literature, regional and ethnic differences cannot be eliminated, which is why this study is crucial.

METHODOLOGY

This descriptive cross-sectional study was carried out with approval from the ethical review committee at the Department of Obstetrics & Gynecology, People's University of Medical and Health Sciences for Women, Shaheed Benazirabad, Sindh, from June 2025 to November 2025. With a 95% confidence level, 4% absolute precision, and a 4.3%[8] predicted frequency of HM history, a sample size of 100 patients is determined. Female patients of age 18-45 years with HM (history of amenorrhea (of >8 weeks)), vaginal bleeding, the absence of an embryo (verified by a consultant radiologist's ultrasound, which showed no cardiac activity), and hydatidiform degeneration of all villi (as reported by a consultant histopathologist on tissue obtained following suction and curettage) were included. Hypertensive patients and those with additional malignancies of any area of the body were not included.

They were all told of the study's goals and purpose, and their informed consent was acquired. We collected their demographic information, such as age, length of time since marriage, and history of using oral contraceptive pills (OCPs). Risk variables such as age >40 years (calculated in years based on the date of birth on their ID card), parity >2 (History) (regardless of the result of prior pregnancies), prior history of moles (History), and cousin marriage (History) (designated if first cousins only) were evaluated. The proforma (attached) had all the data entered.

SPSS version 24 was used for the analysis of all the data. For quantitative characteristics such as age and time since marriage, mean ± SD were computed. For qualitative characteristics such as OCP history and risk factors (age >40 years, parity >2, prior history of mole, and cousin marriage), frequencies and percentages were computed. Age, length of time since marriage, and history of OCPs were among the effect modifiers used to stratify the data. The post-stratification chi-square test was used, and a significance level of P <0.005 was established.

RESULTS

The study's participants ranged in age from 18 to 45, with a mean age of 29.50 ± 5.71 years. According to Table 1, the majority of the patients—57, or 57.0 percent—were between the ages of 18 and 30. According to Table 2, the average marriage lasted 5.53 ± 3.44 years. Table 3 displays the patient distribution based on OCP history.

According to Table 4 of my study, the following characteristics increase the risk of hydatidiform mole in pregnant women: age >40 years (5.0%), parity >2 (22.0%), history of prior mole (5.0%), and cousin marriage (23.0%).

Table 1

Age Distribution of Patients (n=100)

Age (in years)	No. of Patients	%age
18-30	57	57.0
31-45	43	43.0
Total	100	100.0

Table 2

Distribution of Patients according to Duration of Marriage (n=100)

Duration (years)	No. of Patients	%age
≤5	57	57.0
>5	43	43.0
Total	100	100.0

Table 3

Distribution of Patients according to History of OCP's (n=100)

History of OCP's	No. of Patients	%age
Yes	24	24.0
No	76	76.0
Total	100	100.0

Table 4

Frequency of Factors Leading to Hydatidiform Mole among Pregnant Women

Factors	Frequency (%)	
	Yes	No
Age >40 years	05 (5.0%)	95 (95.0%)
Parity >2	22 (22.0%)	78 (78.0%)
Previous history of mole	05 (5.0%)	95 (95.0%)
Cousin marriage	23 (23.0%)	77 (77.0%)

DISCUSSION

Forms of gestational trophoblastic disease (GTD) that involve villous development are called hydatidiform moles (HMs). Histologically, they are distinguished by abnormal alterations in the placenta. In particular, these placentas exhibit variable levels of trophoblastic proliferation and villous stromal oedema in the chorionic villi. Based on biology and genetics, hydatidiform moles are classified as either partial hydatidiform moles (PHMs) or complete hydatidiform moles (CHMs).[9]

The premalignant form of gestational trophoblastic neoplasia is called a hydatidiform mole. Its potential to have serious effects on women's health makes it of clinical and epidemiological significance.[10] Since complete

hydatidiform moles are more likely to persist (needing therapeutic intervention) or proceed to choriocarcinoma, they are the more clinically significant of the two types of molar illness. While less than 5% of partial moles may develop gestational trophoblastic neoplasia, 15–20% of entire moles will. Usually diploid but sometimes tetraploid, complete hydatidiform moles are androgenic gestations. The extra haploid set of chromosomes in partial hydatidiform moles is derived from the father. These moles are triploid conceptuses. Serum hCG levels and clinical indicators, including as vaginal bleeding and enduring pregnancy symptoms, are commonly used to track the persistence of both kinds of moles.[11]

Regional differences exist in the prevalence of molar pregnancy. It is widely accepted that emerging nations have a higher incidence. Women under the age of twenty and those over forty have a higher occurrence. Additionally, it is more common in patients with low socioeconomic level, nulliparous women, and women whose diets lack enough amounts of carotene, folic acid, and protein.[12] In addition to age, a history of miscarried children raises the risk of GTD. For instance, there is a correlation between the risk of molar pregnancy and elective abortion and miscarriage.[9]

The purpose of this study is to ascertain the prevalence of the factors that contribute to hydatidiform moles in pregnant women. The study's participants ranged in age from 18 to 45, with a mean age of 29.50 ± 5.71 years. Of the 57 patients, the majority (57.0%) were in the 18–30 age range. Age >40 years (5.0%), parity >2 (22.0%), history of prior mole (5.0%), and cousin marriage (23.0%), according to my research, are the factors that contribute to hydatidiform moles in pregnant women. Risk factors such as mother age >40 years was discovered in 4 patients (5.8%), parity >2 in 14 patients (20%), cousin marriage in 13 patients (18.6%), and prior history of HM in 3 patients (4.3%), according to an Iranian study that included 70 patients with HM.[8]

One known risk factor for molar pregnancies is extremes in age.[9] We discovered a strong correlation between a diagnosis of hydatidiform mole and advanced maternal age. The elder women's oocytes are probably more susceptible to artificial fertilization.[13] Research indicates that women who become pregnant after the age of 35 face a markedly elevated risk, which increases tenfold after the age of 40.[14] In addition to geographic variations, age is a likely risk factor for hydatidiform moles. Women between the ages of 25 and 29 had the lowest incidence of hydatidiform moles.[15] Women who became pregnant before the age of 16 or after the age of 40 had a tenfold higher risk of developing a hydatidiform mole.[16] According to Sebire[17], women who conceived before the age of 15 had a ten to twenty-fold increased chance of molar pregnancy; women over 45 and 50 had a twenty-fold increased risk, and women over 50 had a 200-fold increased risk. Fertilization failure could be one of the reasons. Triploid pregnancies are more common in younger women, although maternal triploidy is more common in older patients.

Elderly women had a higher incidence of molar pregnancy, and this risk rose steadily with age.[18] Older women are more likely than younger women to experience aberrant ovum fertilization. Pregnant women over the ages of 35 and 40 were especially at higher risk.[19,20] We discovered that 11.43% and 14.29% of pregnant women in the study and control groups, respectively, were under the age of 20, which is not a significant difference based on the literature on age as a possible risk factor. Hydatidiform moles were shown to be more common among women under the age of 20, who are just starting their reproductive years.[21]

Younger women also had a higher risk of molar pregnancy, according to other authors.[19,22] According to reports, women under the age of 15 had a six-fold increased relative risk.[19] The age at which molar pregnancy is most likely to occur is 17.5 years old, according to Audu[23], whereas Hancock[24] found that teenage women are twice as likely to have it as older women. However, according to Parazzini[25], growing older only raised the likelihood of a complete mole, not a partial mole.

The molar pregnancy in nullipara (28.88%) was described by Ben Temime.[26] Similar findings were also reported by Altieri[27] and Audu.[23] On the other hand, Nowak[28] found that women with more births had a higher frequency of hydatidiform mole. Kuvačić[29] asserts that evaluating past reproductive health is crucial for determining current reproductive health and any variations in a pregnancy. Epidemiological research found that whereas one or more prior pregnancies reduced the incidence of gestational trophoblastic illness, prior spontaneous abortions increased it.[30]

One known risk factor for spontaneous abortion is a hydatidiform mole.[31] Warning symptoms of a threatened or initiated spontaneous abortion were used to identify most molar pregnancies. In his research, Kashanian[31] found that women with a history of two or more miscarriages were at a higher risk of developing a mole. Compared to 9.5% of non-molar pregnancies, Rezavanet[32] found that 14.5% of patients with hydatidiform moles had prior spontaneous miscarriages. But there was no statistically significant change.

CONCLUSION

This study found that among pregnant women, the following characteristics are associated with hydatidiform moles: age >40 years (5.0%), parity >2 (22.0%), history of prior mole (5.0%), and cousin marriage (23.0%). Therefore, we advise that every woman undergo early screening and therapy of these factors in order to prevent this debilitating condition and enhance the social lives of these specific patients.

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