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Understanding of already known fact: Evaluating frequency and determinants of Hydatidiform Molar Pregnancy

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Abstract: Introduction: Sporadic presentation of hydatidiform has been reported previously as 1 in 1000 pregnancies. In rare cases asymptomatic molar pregnancies can cause problems if not identified in early radiological investigations. The aim of this study is to evaluate the frequency of hydatidiform (molar pregnancy) presenting with associated symptoms, analysis of determinants and management in Sindh, Pakistan. **Methodology:** This is a cross sectional study, patients were divided into categories according to maternal age, gravida while Beta HCG values were reported along with radiological investigation reporting to confirm hydatidiform molar pregnancy. Statistical package of social science version 21 was used to analyze the data. **Results:** Total 51 patients were identified with hydatidiform molar pregnancy during study period of 12 months from more than 1000 full term reported pregnancies, indicating 5.1% prevalence of disorder. The diagnosis has been confirmed only 1 (1.9%) case of partial molar pregnancy while 50 (99.1%) were complete molar pregnancy cases, managed by suction evacuation method, risks factors of hydatidiform molar pregnancy with advanced maternal age, recurrent molar pregnancy and positive family history the odds ratio has indicated positive association between first two determinants with OR of 1.71 and 1.21 respectively. **Conclusion:** Overall recorded frequency of hydatidiform in our institute is 5.1% within 1 year. Advanced maternal age and previous history of molar pregnancies are risk factors of hydatidiform.

Keywords: Molar Pregnancy, Delayed presentation, Hydatidiform, Maternal Morbidity

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Introduction

Molar pregnancy is a gestational trophoblastic disease categorized by an irregular development of placental tissues as of unsustainable pregnancy [1]. The known types of molar pregnancy are complete molar and partial molar, with the difference of placental tissue abnormal and swollen and abnormal formation of placenta respectively [2]. Patient present with moderate to severe vaginal bleeding leading to anemia, ovarian cyst and larger uterus, however, more serious complications are respiratory distress, hyperemesis and pre-eclampsia, persistent trophoblastic disease and malignant trophoblastic disease such as choriocarcinoma [3]. Sporadic presentation of hydatidiform has been reported previously as 1 in 1000 pregnancies, early diagnosis and management is crucial. In rare cases asymptomatic molar pregnancies can cause problems if not identified in early radiological investigations [4]. Ultrasonography in first trimester is known as universal practice to identify abnormalities, however, in developing countries like Pakistan, India and Bangladesh the antenatal care is still not up to the mark and according to a survey almost 70% of pregnant females are deprived of antenatal care [5]. This decline of basic health care service leads to second trimester diagnosis of molar pregnancy with more severe complications such as vaginal bleeding, 'large-for-dates' uterus and passage of vesicles per vaginum [6]. However, lately,

with the cumulative routine of ultrasound investigation either regularly in the first trimester or for management of initial pregnancy problems, maximum pregnancies affected by hydatidiform are expatriate preceding to the progress of the typical features mentioned earlier [7]. Determinants of hydatidiform are diverse and unspecific, a few studies indicated maternal age could be a reason, while assisted pregnancy especially with hormonal therapy are another reported determinant. Recurrent hydatidiform has captured the attention of researchers in last decade, indicating higher chances of repeated incidents after first hydatidiform, unusually advanced amount of Beta HCG may also indicate the presence of Hydatidiform molar pregnancy along with ultrasonographical investigation. [8-9]The aim of this study is to evaluate the frequency of hydatidiform (molar pregnancy) presenting with associated symptoms, analysis of determinants and management in Sindh, Pakistan.

Methodology

This is a cross sectional study, conducted in obstetrics and gynaecology department of Shaheed Muhtarma Benazir Bhutto medical University, Larkana for 1 year of duration (October 2021-October 2022). After getting approval from departmental head on 20th October 2022, patients reported in department with diagnosis of hydatidiform molar pregnancy were included in the study with an informed consent explained by language of understanding by primary investigator. The patients were either referred form clinics or dispensaries of city or visited after identification of abnormality by sonographers. All relevant details including demographics, history of previous pregnancies, miscarriages, abortions, parity, antenatal history if available and symptoms were documented. Patients were divided into categories according to maternal age, gravida while Beta HCG values were reported along with ultrasonographic investigation reporting to confirm hydatidiform molar pregnancy. Statistical package of social science version 21 was used to analyze the data, for continuous variables such as maternal age, gravida, beta HCG values the descriptive analysis was performed and results are represented in mean and standard deviation, while associated symptoms, history and other variables were documented infrequencies and percentages. To assess the association of measure between two variables the paired ample T-test was performed. To identify the normality of data chi-square test was performed taking p-value of > 0.045 as significant. Regression model was used to assess the odds ratio of occurrence of disorder with specific determinants.

Results:

Total 51 patients were identified with hydatidiform molar pregnancy during study period of 12 months from more than 1000 full term reported pregnancies, indicating 5.1% prevalence of disorder. Maternal age was categorized within five groups indicating gradual increase in age starting from > 20 years of age to < 35 years of age. Mean age of study participants was 29.2 ± 6.9 years. Maximum mothers were between the age category of 26 – 30 years with 24 (47%), followed by 21 - 25 years 8 (15.6%) and < 35 years 8 (15.6%) of age. The p-value of age categories was 0.61 and insignificant. (Figure 01)

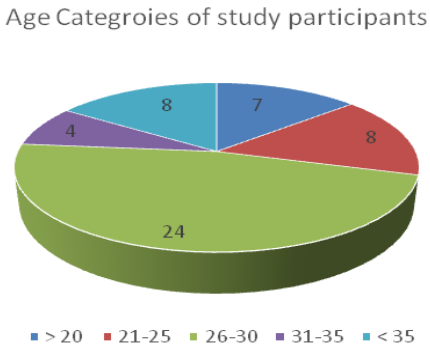

Figure 1: Categorization of age in study participants.

Gravida was also categorized within groups, allocating patients with 0-5 gravida, 6-10, 11-15 and > 15 respectively, indicating frequency of 26 (50.9%), 19(37.2%), 4 (7.8%) and 2(3.9%) in each group respectively, the mean value of gravida was 5.5 ± 3.9. (Figure 2)

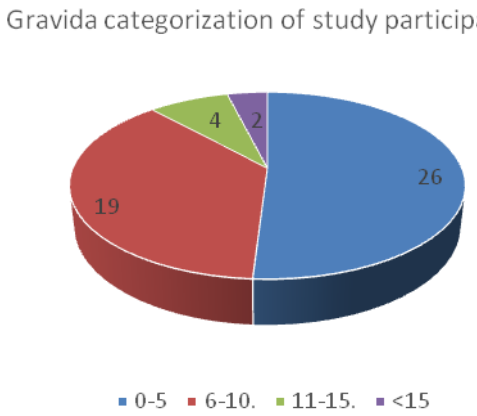

Figure 2: Categorization of gravida in study participants.

The diagnosis has been confirmed only 1 (1.9%) case of partial molar pregnancy while 50 (99.1%) were complete molar pregnancy cases, managed by suction evacuation method. Mean value of full term pregnancies was reported as 3.8 ± 3.2, however, mean value of miscarriage, aborted, ectopic or molar pregnancies resulted in loss of pregnancy was 0.96 ±1.0. Mean value of the reported Beta HCG was 164236.27 ± 110114.9 IU/L while week of pregnancy at the time of hydatidiform molar pregnancy was 10.61 ± 3.3 with minimum of 06 weeks and maximum of 18 weeks gestation age. Per-vaginal bleeding was most commonly reported presenting complaint of study participants with 47(92.1%) while Hyperemesis was reported in 2 (3.9%) and 2(3.9%) were asymptomatic and diagnosed accidently. The most commonly reported risk factor was advanced age, defined as maternal age between 30 – 40 years of age, in 24(%) participants. Followed by recurrent molar pregnancy 19 (37.2%) and most uncommon risk factor was positive family history with 3 (5.8%) while remaining 5 (9.8%) didn't idnetified any determinant. (Figure 03)

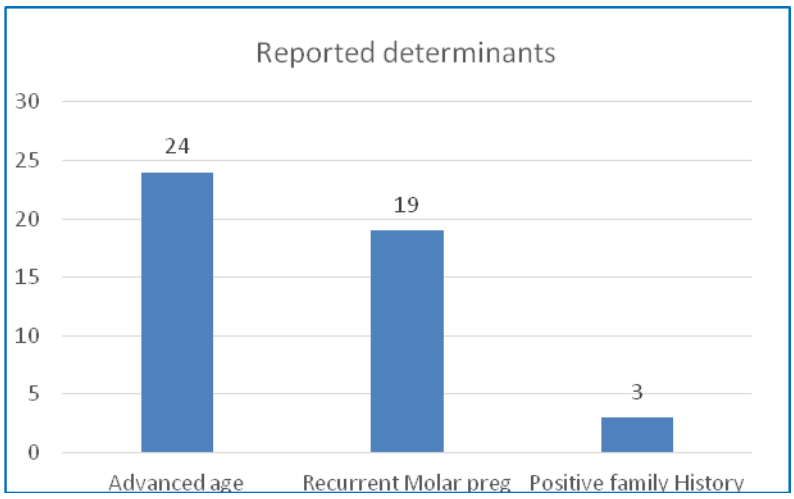

Figure 3: Frequency of reported risk factors of HMP.

To assess the order of association between known risks factors of hydatidiform molar pregnancy with advanced maternal age, recurrent molar pregnancy and positive family history the odds ratio has indicated positive association between first two determinants with OR of 1.71 and 1.21 respectively. The confidence interval was set as 95%, showing 0.87 – 4.24 and 0.41 – 2.91 for

advanced maternal age and recurrent molar pregnancy. However, the positive family history indicated negative association with OR of 0.62 and CI 05% of 0.02 – 1.14. (Table 02)

Table 2: Measure of association between determinants and HMP.

Variables	Frequency	OR	CI 95%	Interpretation
Advanced Maternal Age	24	1.71	0.87 - 4.24	Positive association
Recurrent Hydatidiform Molar Pregnancy	19	1.21	0.41 - 2.91	Positive association
Positive family history	3	0.62	0.02 - 1.14	Negative Association

According to the results of our study, frequency of hydatidiform molar pregnancy was reportedly 5.1% with most commonly reported symptom of PV bleeding, positive odds of outcome with advanced maternal age and previous hydatidiform molar pregnancy occurrence.

Discussion:

The prevalence of complete and partial molar pregnancies in developed countries in 1-3/1000 pregnancies [10], while developing countries prevalence is comparatively higher as antenatal care is less frequent and ultrasonography from proper health care institutes are avoided, spouse and family pressure also plays an important role in decreased antenatal care within first trimester, the most important duration of pregnancy to evaluate molar pregnancy [11]. Several determinants for molar pregnancies have been advocated in previous studies, containing maternal and paternal advanced age, maternal genetic abnormalities, blood group and, oral contraceptives[12]. The only conclusive information, however, relates to the mother's age and the incidence of a past molar pregnancy[13]. The extra risk is more frequently linked to CHM and less frequently to PHM. The genetic imprint may be reset by nutrition. Additionally, it is observed that the geographic distribution of these moles may be explained by a decrease in vitamin A in the patients' diets throughout their pregnancies[14]. The age categories has been proposed in previous studies too, a study conducted in Iraq general hospital represented four groups as 14-21 years, 22-29 years, 30-37 years and 38-45 years of maternal age, results showed prevalence of hydatidiform molar pregnancy as 38%, 31%, 14% and 17% respectively. These results are comparatively similar to our study as our data indicated prevalence within age categories of > 20 years, 21 – 25 years, 26-30 years, 31-35 years and < 35 years with 13.7%, 15.6%, 47%, 7.8% and 15.6% respectively [15]. Parity has been evaluated in another study with 6.7% and 17.4% of positive association has been confirmed with multiparous and grand multiparous group, while our study showed 3.9% and 7.8% of prevalence in same groups [15]. However the maximum frequency of hydatidiform molar pregnancy was reported in multi gravida. Previous loss of pregnancy due to miscarriage, abortion and ectopic pregnancy showed significant association with occurrence of Molar pregnancy [16]. The most commonly reported symptoms of Hydatidiform molar pregnancy diagnosed after initial stage of gestation (after 10 – 12 weeks) are per vaginal bleeding, 92.1 % of our study participants have reported the same sign, however, hyperemesis was found in 3.9% and 3.9% were asymptomatic and diagnosed accidently [17-19]. Determinants have been evaluated numerous times in previous studies, apart from many reported risk factors our study participants showed advanced maternal age as the most common contributor in hydatidiform molar pregnancy, although the frequent presence was noted in age group between 26-30 years but advanced age of mother (more than 30 years) was reportedly enhances the chances of abnormalities including molar pregnancy [20]. The measure of outcome association has been assessed previously and described the positive association between determinants and outcomes such as advanced maternal age and recurrent molar pregnancy, our study results endorsed this result with similar positive association with both risk factors, however, the positive family history was not found as one of the risk factor of disorder. Beta HCG has been evaluated to diagnose hydatidiform molar

pregnancy along with ultrasound investigations, however the amount of Beta HCG is tricky to evaluate as the rise in quantity of hormone as compared to normal pregnancy can be detected by experienced health care providers only [21,22].

Limitations:
Ultrasonography investigations remain same for diagnosis, especially if the patient is asymptomatic. Data from single centre and cross-sectional study designs are known limitations if the study, as recall bias might have affected the accuracy of data, as the centre is located in smaller city of Sindh, Pakistan the referral system is comparatively weak and antenatal care is compromised due to health seeking behaviours of population. Another study with larger sample size, longer follow-up is recommended for more accurate understanding.

Conclusion:
We can conclude that the frequency of hydatidiform is 5.1% and incident is higher in 25-30 years of maternal age, however the recurrent molar pregnancy is also an independent risk factor. The diagnosis of molar pregnancy is crucial if delayed, after 12 weeks of gestation patient will suffer per vaginal bleeding and in rare cases more severe complications if not diagnosed within first 8-10 weeks of pregnancy. Antenatal ultrasound investigations are more important than it gets credit for, a proper awareness should be given to all for timely and accurate antenatal care to diagnose and manage abnormalities.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE
Not applicable.

HUMAN AND ANIMAL RIGHTS
No animals were used in this study. The study on humans was conducted in accordance with the ethical rules of the Helsinki Declaration and Good Clinical Practice.

CONSENT FOR PUBLICATION
Not applicable.

AVAILABILITY OF DATA AND MATERIALS
None.

FUNDING
None.

CONFLICT OF INTEREST
The authors declare no conflict of interest, financial or otherwise.

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