## Original Research

# DESCRIPTIVE STUDY OF HYDATIDIFORM MOLE ACCORDING TO TYPE AND AGE AMONG PATIENTS IN WASIT PROVINCE, IRAQ

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**ABSTRACT**

**Introduction :**Hydatidiform mole is the most common among gestational trophoblastic diseases in women, which characterized by abnormal gestation, and subdivide to complete and partial hydatidiform mole. It continues to be a significant problem among women, because of complete H mole has a tendency to be a malignant. The diagnosis of this disease is very important because it has the potential to be transformed into choriocarcinoma and to differentiate it to a complete or partial. **Methods:** In this study, data was collected from fifty-two patients selected randomly from Al-Karama Teaching Hospital and Al-Zahraa Teaching Hospital in Wasit Province. Specialized histopathologists examined the sections with haematoxylin and eosin (H & E) to confirm the diagnosis. Clinical information, clinical examination and histopathological parameter include type and age were obtained. The data collection period was from October 2018 to April 2019. **Results**: The descriptive data showed that forty-eight percent of patients have a complete hydatidiform mole (CHM) and fifty-two percent have a partial hydatidiform mole (PHM). Moreover, the same results demonstrated that the age group of patients between (14-21) and (22-29) years were more common than the other groups. **Conclusion:** The age group under 30 years is the most common hydatidiform mole infected and Partial hydatidiform mole was the most common type of hydatiform mole.

**Keywords :** Hydatidiform Mole, Age, women, trophoblast cells, histopathology, Iraq.

**Introduction**

The placental is a particular organ, which is capable of supporting life even if it is temporary. It serves as a lifeline for the physiological connection between the mother and the fetus during the pregnancy (Ray,2010). "Placenta is an interference organ between the fetus and mother During healthy pregnancy placenta has a crucial role to play while transporting the fetus ' oxygen and nutrients to the fetus for growth, development and disposal of wastes back to their mother's body. (Um ,2004).

Placental pathology is known as a hydatiform mole for severe trophoblast invasiveness (Savage et al.,2013). The unusual placenta features are the mass of tissue with grapelike, swollen, chorionic villi. The trophoblast shows an increased rate of proliferation and is very invasive. Such high growth and invasion may lead to invasive trophoblastic gestational diseases (Kars et al, 2009). "Hydatidis derived from the Greek word hydatis, which means watery vesicle, and mole comes from the Latin word moles which means shapeless mass" (Al-Mahdili,2010). Hydatidiform mole (HM) is the most common type of gestational trophoblastic disease (GTD), also called a molar pregnancy (Wagneret al., 2008). HM is an unusual pregnancy with severe hydropic enlargement and trophoblastic factor proliferation affecting part or all of the chorionic villi. HMs are sub-divided into complete HM (CHM) and partial HM (PHM) based on clinical symptoms, histopathology and genetic differences (Pakzad, et al.,2014). Placenta comprises cell-like vesicles (small sacs) of grapes normally visible to the naked eye. Molar pregnancy or HM is an irregular pregnancy. The vesicles are caused by fluid, chorionic villi distention. Hyperplasia of the trophoblastic tissue is noted when examined in the microscope (Abbas and Al-Khafaji,2014). HM is distinguished by different degrees of trophoblast multiplication, (cytotrophoblast, syncytiotrophoblast and intermediate trophoblast) and vesicular swelling of the placental villi, connected to an absent embryo or irregular embryo (Lurain,2010). Given the spontaneous regression of the majority of HMs after a suction evacuation, some may experience gestational trophoblastic neoplasia (GTN) and thus require chemotherapy. (Cheung et al.,2004). Grossly, the hydatidiform mole looks like masses of thin-walled, translucent, cystic, grape-like structures. There are two types of hydatidiform mole: Complete hydatidiform mole (CHM) and Partial hydatidiform mole (PHM).

Molar pregnancy incidence records vary according to a geographic area. For developing countries, the incidence is generally accepted to be very high. For women younger than 20 and over 40 years, the rate is higher (Shazly et al.,2012). In low-economic patients and women who have inadequate food, folic and carotene diets, it is higher also in nulliparous women. (Aghajanian et al., 2007).

Nutritional and socioeconomic factors have been attributed to the high incidence of molar pregnancy in some population. Regions with a high incidence of molar pregnancy have been reported to correspond to geographic areas with a high vitamin A deficiency (Loh et al.,2004). In Iraq, the incidence is 1 in 221 women according to previous statistics. In Basra, The incidence of molar pregnancy and choriocarcinoma was 1.7/1000 deliveries and 0.04/1000 deliveries, respectively (M Chaied,,2007).

The incidence of GTDs in Maternity Teaching Hospital (in Erbil City) 1 in 318 is comparable to the incidence in some Middle East and Far Eastern countries(Alalaf, and Omer,2010). In Nigeria, a high figure of 1 in 379 has also been reported (Agboola, 2006).

Extreme maternal age and previous molar pregnancy are two known risk factors. Late or very young maternal age has reliably associated with higher levels of complete hydatidiform mole. Compared to women aged 21-35 years, the risk of the complete mole is 1.9 times higher for women both_35 years and_21 years as well as 7.5 times higher for women _40 years(Sebire et al.,2002). Risk factors for developing a molar pregnancy include advanced maternal age, teenage, inadequate nutrition, disturbed maternal immune mechanisms, cytogenetic abnormality, environmental factors and a history of hydatidiform mole (Chandra,2015). The evidence for the role of other factors including diet, ethnicity, endogenous estrogen level, ABO blood group, and environmental toxins is weak (Cabill and Wardle,2006).

Hydatidiform mole can be detected early by using ultrasound and serial monitoring of the serum Human Chorionic Gonadotropin (HCG) hormones. However, HM and the Remain Products of Conception (RPOC) can be difficult to be distinguished sonographically despite the presence of some specific sonographic features, that can differentiate HM and RPOC (Betel et al.,2006). Thus, in order to meet the gold standard for the diagnosis of HM, RPOC must be submitted for further histopathological analysis (Horn et al.,2009). Objective of the study detection the most affected age group as well as the most prevalent type.

**Methods**

**Specimens of patients**

This study includes collecting fifty-two specimens randomly selected from patients infected with H mole with age range between 14 and 45 years, Collection of blocks patients from (2009- 2018 years). The study was submitted and approved by the Faculty of College of Science, the University of Wasit in collaboration with AL-Karama and AL-Zahraa Teaching Hospitals, Wasit, Iraq. Forty formalin-fixed paraffin-embedded tissues section of hydatidiform mole patients with age range between 14 and 45 years were included in this study, 20 cases of complete hydatidiform mole and 20 cases of partial hydatidiform mole. All cases of patients were collected from Al-Zahraa Teaching Hospital and Al-Karama Teaching Hospital in Wasit province, Iraq. Specialized histopathologists were examined the sections with haematoxylin and eosin ( H&M) . Clinical information was obtained involving, clinical examination, and histopathological parameter includes (type and age).

This study was carried out in Laboratories of the All cases of patients were collected from Al-Zahraa Teaching Hospital and Al-Karama Teaching Hospital. The collected data for each patient includes a history of infection, age. These statistics included all types of H mole for the period mentioned. Data were distributed according to years and age.

**Results**

We colleted (52) specimen during the study period. The patients were grouped into four age groups (1-4) with an eight years interval. The first age group was 14-21 years, while the last age group was 38-45 years as shown in table 1.

**Table 1: Distribution of the hydatidiform mole patients according to age groups**

| Age group | N | % |
|---|---|---|
| **14-21 Years old** | 20 | 38 |
| **22-29 Years old** | 16 | 31 |
| **30-37 Years old** | 7 | 14 |
| **38-45 Years old** | 9 | 17 |
| **Total** | 52 | 100 |

**Distribution of hydatidiform mole patients according to histological types**

Out of fifty-two hydatidiform mole patients were taken randomly, 25 patients (48.08%) of them were found to have a complete hydatidiform mole (CHM), and 27 patients (51.92%) have partial hydatidiform mole (PHM) (Table 2).

**Table 2 : Distribution of the hydatidiform mole patients according to histological types of disease.**

| Case | N | % |
|---|---|---|
| **CHM patients** | 25 | 48 |
| **PHM patients** | 27 | 52 |
| **Total** | 52 | 100 |

**Discussion**

**Distribution of hydatidiform mole patients according to age group**

Estimation of patients age group showed that 20 (38 %) patients with age group 1 (14-21), 16 (31 %) in age group 2(22-29), 7 (14 %) in age group 3 (30-37), 9 (17 %) in age group 4 (38-45) . The minimum age was 14 years, while the maximum age was 45 years old. According to these results, the highest incidence rate been in the age group 1 (14-21). So we found that the incidence of HM in younger age patients is the most common. Our result concord with the result of (Ertiro et a , 2013) , when he found that the prevalence of HM was observed to be high (27.5%) in the age group below 20 years.Whereas it is concluded that the age between 15-20 years was the only risk factor associated with the development of hydatidiform mole.

Also, our results were similar with the results of Shazly et al., (2012), they clarified that the incidence in women under the age of 20 was higher and compared with them in that the

incidence in women over the age of 40 is. Nevertheless, contrary to these findings, which also showed the risk of rising at age above 40 years, this trend was not observed in this sample, where it was found that the incidence rate in age groups 3 and 4 was small, likely due to early marriage in our community and by the age of 40 years, the majority of women completed their family. Such conflicting results underline the need for further studies involving a broader patient population to create an absolute correlation between HM and advanced maternal age. The above findings also showed that the prevalence of the disease is also high in age group 2 (22-29), which indicates that this disease was more severe in reproductive age. Jaffar et al. (2011 ), in his study, stated that in all regions and ethnic groups, the motherhood reproductive age is the risk factor most associated with hydatidiform mole. ZH ,et al. (2019) also concluded that the molar pregnancies are more common at the extremes of reproductive age. However, the activity of sex hormone and maturation of ovum in the period between 14- 29 years maybe lead to the hydatidiform mole. There are two main risk factors that increase the probability of molar pregnancy: Either the female is too young or too old to be pregnant (under 20 years, or over 35 years), and with past molar pregnancy history ( Savage ,2008) .

While not entirely clear aetiology of the disorder, possible risk factors can include ovaroid defects, uterine anomalies or nutritional shortcomings, including dietary protein, folic acid, and carotene. (Jaffar ,2011). Another study was done in Singapore, Karachi and Nawabshah were suggested that hydatidiform mole arises as a consequence of defective ova (Nizam et al., 2009). The low socioeconomic status of patients plays an important role in aetiology of this disease (Jaffar,2011) . A study conducted by Tham also found that the low socioeconomic status and malnutrition considered as the general reason for this disease (Nizam et al., 2009).

**Distribution of hydatidiform mole patients according to histological types**

It has been shown from the results, that the percentage of complete hydatidiform mole patients to partial hydatidiform mole patients was 48% to 52 % , where PHM was higher as compare to CHM . This result comes in contrast with results of (Ertiro et a , 2013), who observed that the prevalence of partial hydatidiform mole and complete hydatidiform mole were 11.1% (20/180) and 1.7% (3/180), respectively. Jaffar et al., (2011) were concluded that CHM was higher as compared to PHM , they found out of 60 cases of hydatidiform mole, 40 cases of complete hydatidiform mole and 20 cases of partial hydatidiform mole.

The results above were in agreement with the results of Abbas and Al-Khafaji ,(2014)(in Baghdad \Iraq ) , where the sixty cases of hydatidiform mole were obtained and classified for 30 patients to each complete and partial hydatidiform mole. Also, Gupta , et al.,(2012) found that the rate of CHMs patients was equal the PHMs in their study.

Another study was done by Ali et al. (2018) during the period between Jan 2011-Jun 2013 in Erbil\ Iraq., on the pathology archives of the Maternity Teaching Hospital & some Private

Histopathological Laboratories demonstrated that the number of PHM(n=24) same the number of CHM ( n=24).

**Conclusions:**

The age group under 30 years is the most common hydatidiform mole infected and Partial hydatidiform mole was the most common type of hydatiform mole

**Conflicts of Interest**

The author declare no conflicts of interest.

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