

# A retrospective analysis of patients treated for gestational trophoblastic diseases: a 4-year experience of a tertiary hospital

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## Summary

**Aim:** To study incidence, clinical outcome, and follow-up data of the gestational trophoblastic disease (GTD) in patients diagnosed in the present Department. **Materials and Methods:** This study included the authors' retrospective clinical records regarding the cases of GTD which were diagnosed and followed up between January 2011 and January 2015. Patients' age, gravidity and parity, obstetric history, subgroup of GTD, gestational weeks, management results, and pre-post treatment  $\beta$ -hCG levels was investigated and an incidence study was constituted. **Results:** Total of 56 GTD cases were hospitalized and clinical records of 16,840 normal spontaneous deliveries were evaluated during the study period. The incidence of GTD was 3.3/1,000 cases. After histopathological examination, nine of 47 cases were partial molar pregnancy, whereas 38 cases were complete moles. There were no choriocarcinoma and invasive moles. All cases were treated with vacuum curettage without complication. **Conclusion:** The GTD incidence in this clinic is high with a rate of 3.3/1,000 per pregnancy compared to Turkish literature. High birth rates of our population may play a role in high incidence results. Further investigation in this field is essential.

**Key words:** Molar pregnancy;  $\beta$ -HCG; Methotrexate; Abortus; Bleeding.

## Introduction

Gestational trophoblastic diseases (GTD) are a group of diseases that develops as a result of abnormal fertilization and are characterized by abnormal proliferation of trophoblasts during pregnancy. They tend to present themselves in different forms, ranging from benign mole hydatidiform to life-threatening choriocarcinoma [1]. The diseases' incidence shows great differences among ethnicities and regions in different parts of the world, due to the differences in using the population-based or hospital-based registry systems [2]. In 2013 Turkey showed a GTD incidence of 0.6 in 1,000 pregnancies [3].

The condition frequently presents itself with vaginal bleeding, enlarged uterus, and pelvic pain. When increased blood  $\beta$ -HCG levels accompany these findings, the patients are then preliminarily diagnosed with threatened abortion or miscarriage. The ultrasound examination findings are generally interpreted as a missed or incomplete abortion [4]. The definitive diagnosis is only made after the histopathological examination of the curettage material. Because clinical findings may vary, patient training and regular follow-up is needed. The patients' condition is assessed through  $\beta$ -HCG levels: if  $\beta$ -HCG levels show a plateau pattern, increase or persist even after six months, they are interpreted as persistent GTD and systemic chemotherapy is required [5].

In this study the authors aimed to investigate the diagnosis, risk factors, and management of patients who were treated at this clinic with a diagnosis of GTD between January 2011 and January 2015.

## Materials and Methods

This retrospective study was planned in the Ümraniye Training and Research Hospital Obstetrics and Gynecology Department and included patients treated between January 2011 and January 2015 with a diagnosis of GTD. All patient data was acquired from the hospital registry. Data regarding age, gravidity and parity, previous histories of spontaneous abortion, molar pregnancy, hyperthyroidism, and hyperemesis were acquired for all patients. After assessing serum  $\beta$ -hCG, hemoglobin, hematocrit levels, and after performing a chest X-ray and a liver function test, the patients underwent a suction curettage procedure under oxytocin infusion. After the procedure, data regarding the histopathological subtype of the trophoblastic disease, the serum  $\beta$ -hCG levels before and after the procedure, and the type of treatment used, were all collected and assessed.

For all statistical analyzes SPSS 15.0 was used. Statistical evaluation of the serum  $\beta$ -hCG (mIU/ml) levels before and after the procedure was done through the Student's *t*-test. The acquired data was then expressed as percentage, mean value, and standard deviation.

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Table 1. — Demographic and clinical characteristic of the patients.

Characteristics	Number	Percentage (%)
Number of primigravida patients	5	8.9
Patients with a history of abortion	8	14.2
Patients with a history of curettage	12	21.4
Hyperemesis	14	25
Complete mole	9	16
Incomplete mole	47	84

Table 2. — Patients'  $\beta$ -hCG levels before and one week after the curettage procedure.

Pregnancy week (weeks)	$6.2 \pm 4.1$
$\beta$ -hCG before emptying (mIU/ml)	$14,320 \pm 704$
$\beta$ hCG after emptying (mIU/ml)	$2,030 \pm 320$

## Results

Between January 2011 and January 2015, 16,840 deliveries took place at the present clinic and 56 were diagnosed as GTD. The age distribution age was between 16 and 52 years and the mean age was  $26.98 \pm 8.07$  years. Mean gravida number was  $3 \pm 1.1$  while mean parity was  $2 \pm 0.8$ . While five cases (8.9%) were primigravida, eight others had a history of abortion in the first trimester. Forty-four patients (78.5%) had no curettage procedure before while two patients (3.5%) had a history of more than two curettage procedures in the past. No patient had a past history of mole pregnancy. Hyperemesis was present in 25% of the patients. The patients' clinical and demographical characteristics are listed in Table 1.

Suction curettage with oxytocin infusion was the preferred treatment procedure applied to the patients of this clinic under general anesthesia. Due to her advanced age, a patient was offered a hysterectomy procedure but she had refused. Pathological assessment revealed nine (16%) cases of complete mole and 47 cases (84%) of incomplete mole pregnancy. No cases of invasive mole, choriocarcinoma or hyperthyroidism were detected. The information regarding the pregnancy week and the  $\beta$ -hCG levels before and after the curettage procedure are listed in Table 2. According to that data, the patients' mean pregnancy week was  $6.2 \pm 4.1$  and in 14 there was fetal heart-beat when they were diagnosed. The mean  $\beta$ -hCG value in the time of the diagnosis was  $14,320 \pm 704$  but it was  $2,030 \pm 320$  one week after the procedure. Because of the recurrence risk, the patients'  $\beta$ -hCG values were checked weekly until they achieved acceptable levels. Upon reaching them, they were checked three more times weekly, and then on a monthly basis for a complete year. The decrease in  $\beta$ -hCG levels occurring after the curettage procedure was accepted as statistically significant. All the patients were advised to use contraception before and up to one year after the procedure.

## Discussion

GTDs are a group of diseases that can potentially be cured completely if treatment is initiated immediately upon early diagnosis [1]. The disease's incidence shows large difference in various regions of the world. For example, the reported mole pregnancy incidence in Japan (two in 1,000 pregnancies) in three times the reported incidence of Europe or North America (0.6–1.1 in 1,000 pregnancies) [6]. The incidence of mole pregnancy in Indonesia is one in 85 pregnancies, which constitutes a serious public health problem [7]. According to a study done in Turkey in 2013, the incidence for mole pregnancy was 0.6 in 1,000 pregnancies, while in the present study it was found to be 3.3 in 1000 pregnancies [3].

Although the real etiology is still not very clear, factors like abnormal gametogenesis or fertilization and malignant transformation of the trophoblastic tissue are thought to play a role in the development of this pathological condition [8]. Besides these, definite risk factors, like a positive history of GTD and maternal age or relative risk factors like being of a Far Eastern race and a nutritional deficiency of proteins, animal fat and vitamin A are likely to influence mole hydatidiform development [9].

According to the available studies of the medical literature, GTD can occur in both planned and unplanned pregnancies, but are more likely to appear during the early stages of the reproductive age [10]. Although the disease is relatively rare in patients with an advanced age, development of postmolar GTD has been reported to be more frequent in pregnancies occurring after the third decade [11]. However Uberti *et al.* found no significant difference between the patient and the control group with regards to the age in which the diseases occurs [12]. The mean age in the present study was  $26.98 \pm 8.07$  and similar to the one Uberti *et al.* reported in their study [12].

Many studies have shown that the risk of developing a molar pregnancy in women who have a positive history of mole hydatiform is 20-40 times higher than the general population [13, 14]. According to Sand *et al.*, for a woman with a history of molar pregnancy, the risk is ten times higher for the condition to repeat itself, in contrast to the general population [15]. Despite there being no patients with a history of molar pregnancy, all of them were informed during their pregnancies on the chances of it being a molar one. The mean gravida number was found to be  $3 \pm 1.1$ .

Marquez-Monter *et al.* and Hsu *et al.*, in their respective studies, concluded that molar pregnancies were more frequent in populations with a low socioeconomic status, and the reason for this high incidence, according to their conclusions, is the low protein consumption that is present in these societies [16, 17]. Other studies performed in the same period have rejected this conclusion and have been more supportive of the view that in places with a high pro-

tein intake, like Alaska, mole hydatiform incidence tends to rise [18, 19]. Because the present medical registries did not offer enough data on the patients' socioeconomic status, the authors were not able to arrive to a conclusion on this topic.

The present clinic used a suction curettage procedure to successfully treat mole hydatidiform cases. No complications were observed in the aftermath of the curettage procedure or during the follow-up period, and within less than a year's time, two of these patients applied at the present clinic with new pregnancies. Both of them delivered successfully and healthily on their expected dates.

Based on the present results the authors state that a comprehensive preoperative assessment of the patients followed by general anesthesia and oxytocin infusion, as done in the present clinic, and then a suction curettage procedure, are a sufficient combination for achieving successful treatment in a mole hydatidiform case. Because it is not possible to foresee the disease, the only option available is to educate patients on the importance of antenatal follow-up and effective contraception. In order to shed more light on this pathological condition and more importantly, to identify its etiological factors in the regions where its incidence is higher, further and more detailed studies are needed.

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