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# Analysis of gestational trophoblastic disease in Baghdad Teaching Hospital

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***Abstract*---**Background: Gestational trophoblastic diseases (GTD) are important and interesting part of gynecological oncology. Women diagnosed with GTD should be counseled that about 8% become malignant and GTN is a significant cause of morbidity, fertility loss and unfortunately mortality in young women. All form of GTD produce B- hCG and monitoring this hormone is a precise biomarker for screening, diagnosis, therapeutic response and follow up of patients. Objectives: To analyze and determine the types, complications, management and outcomes of gestational trophoblastic disease (GTD) and those with irregular follow-up in Baghdad Teaching Hospital through an observational descriptive based approach. Study design: Observational descriptive study. Setting: Department of Maternity, Baghdad Teaching Hospital, Medical City, Baghdad, Iraq. Patients and methods: During the period from January 2013 to January 2014, (60) patients admitted to our hospital were diagnosed and registered to have GTD on the basis of histopathological report, were enrolled in this study. During this period, analysis of patients′ data was done regarding their age, residence, parity, blood group, type of molar pregnancy, 1st clinical presentation, percentage of patients who developed persistent GTD and needed further management with chemotherapy and follow up, their outcome (remission, complications, lost to follow up), history of prior molar pregnancy, then complete medical and gynecological examination was done for each case. All patients were followed up by serial B-hCG titer according to WHO protocol except those who were lost to follow up. Each patient has a hand book in which her complete information about her condition is documented. Results: Thirty six (36) patients

out of 60 (60%) developed persistent gestational trophoblastic disease received chemotherapy, 20 patients (55.5%) out of those 36 patients required only single-agent chemotherapy (methotrexate). 12 patients (33.3%) required single then shifted to multi-agent chemotherapy while only 4 patients (11.1%) were required multi-agent chemotherapy since diagnosis, all 36 patients got complete remission after having their risk scoring system. Six cases out of total 60 (10%) got spontaneous remission following evacuation, while 18 patients out of 60 (30%) had irregular or lost to follow up and presented later on with different presentation, One patient present with heavy vaginal bleeding and on examination and investigation cervical growth was diagnosed then hysterectomy was done followed by chemotherapy and got remission. Three patients presented with metastasis, one to the liver, another to the lung and both of them received multi-agent chemotherapy at oncology unite and got remission. Another one presented with advanced stage pulmonary metastasis and she unfortunately died due to adult respiratory distress syndrome and respiratory failure. Another patient presented many months later with heavy vaginal bleeding and large uterine size, also she died soon after admission. The results were established from the obtained data and then comparison was done with other studies, two cases out of 18 died due to their neglect ion to our medical appropriate management and irregular follow up and presented later with advanced stage. Conclusion: The high proportion of GTD was in age group 15-25 years old, rural area, multiparty, blood group O, house wives. Complete molar pregnancy was the commonest type of GTD in this study. Most of our patients with irregular follow up are multiparous, from rural area, blood group A and below 18 years old. Chemotherapy is effective in treatment of persistent GTD. The management of gestational trophoblastic disease in our hospital not differs from that protocol found in other centers in the world, However, Follow up of patients is the real problem for both patients and doctors because no special centers for GTD and no registration to a patients in proper way and poor knowledge and education of our population regarding this disease.

***Keywords*---**Gestational trophoblastic disease (GTD), human chorionic gonadotrophin (hCG), Epidemiology.

## Introduction

Gestational trophoblastic disease (GTD) is a term for a group of disorders that are pregnancy-related arising from abnormal placental trophoblastic cell with features of abnormal proliferation of gestational trophoblastic tissue.(1)

The World Health Organization (WHO) classification division of GTD is:

1. Premalignant disorders including: a .Partial mole, b. Complete mole
2. Malignant disorders which include: a. Invasive mole ,b.Choriocarcinoma, c. Placental site tumors, d. Epithelioid trohpoblastic tumor

Criteria for the diagnosis of gestational trophoblastic neoplasia (GTN) or persistent GTD are:

1. Plateauing of human chorionic gonadotropin (hCG) which lasts over a period of 3 weeks or longer, measurements that are done on days 1,7,14,21.
2. Rise of hCG level for three weekly consecutive measurements or longer, at least a period of two weeks or more; measurements on days 1,7,14
3. HCG level still elevated for six months or more after evacuation.
4. Choriocarcinoma by histological study of product of conception .(2, 3 )

**Epidemiology**:

Incidence of the different forms of GTD all over the world vary, main because is that few countries have registers, and rather than being population-based, incidence figures are often depending on hospital figures.(4) GTD can follow all kinds of pregnancies, so that the indicator for the incidence should ideally include all live births, still births, miscarriages, ectopic pregnancies.(5) There are some variations including geographical and racial factors with perhaps higher incidence in Asia and Africa for unknown reasons . It is reported that the incidence of GTD in southeast Asia is 7- 10 times higher than in North America or Europe.(6)

Reported incidence of h. mole in Europe or North America is (0.57–1.1 per 1000) pregnancies, while studies in Japan and Southeast Asia have an incidence as high as ( 2.0 per 1000) pregnancies. The vast majority of partial and complete mole aborts spontaneously during the first trimester, so their incidence is estimated to be 2%of all miscarriages. Incidence of choriocarcinoma is 1/10000- 1/50000 or it is estimated to be 3-10% of H.mole.(7)

**Risk factors**

1. Age of mothers is the most constant risk factor associated with molar pregnancy, with the extremes of age are associated with a higher incidence. (6) Women under age of sixteen have a six fold higher risk than those aged (16-40 years), and women with age at conception fifty or more have a 1 in 3 chance of having a GTD.(8)
2. History of previous molar pregnancy: A previous history of H mole increase the risk of developing a GTD in the subsequent pregnancy by at least 10 folds compared to general population. The frequency in a subsequent pregnancy is about (1-2 %).(10) The risk of subsequent third H mol may be as high as 33%; that could be complete or partial regardless of the type of initial molar pregnancy. (12)
3.Geographical factor and ethnicity : It is found to be increased in Southeast Asia especially Japan and it is also found to be increased in UK Asians, and American Indians. (7)
4.History of previous spontaneous miscarriage or infertility is a risk factor for both partial and complete molar pregnancy.(8)
5.Familial recurrent H mole: most molar pregnancies are sporadic, but still a familial syndrome of recurrent H mole has been reported; it was first described in 1980 when has been found in limited number of families of

both European and Asian descent.(9) Analysis of Pedigree has suggested that familial hydatidiform mole could be a single gene disorder with an autosomal recessive pattern of inheritance. Familial H mole may be considered in:

a. Females with GTD who have a close member in her family with a history of molar gestation.

b. Females with two or more complete H mole, normal pregnancies and/or a history of abortion or partial mole.

c. Ability to find a diploid diparental origin of a complete mole.(9)

**Chromosomal and pathologic features of molar pregnancy:**

Molar pregnancies are further classified as partial or complete on the basis of histopathologic features, gross morphology, and karyotype (table 1)

Table (1): Pathologic karyotype features of partial and complete H mole (10)

| FEATURES | COMPLETE MOLE | PARTIAL MOLE |
|---|---|---|
| Macroscopic Villous edema: | Pronounced and global | Mild and focal |
| Microscopic: | Trophoblastic Circumferential involvement | Focal involvement hyperplasia |
| Trophoblastic atypia : | Moderate to marked | Mild |
| Karyotype: | Generally 46 XX | Generally triploid; biparental uniparental |
| Embryonic/fetal elements : | Absent | Present, with stigmata of triploidy |

Complete H mole: in general arises from fertilization of an anuclear empty ovum by a haploid sperm, that duplicate its chromosomes. So that the nuclear chromosomes of complete H moles are entirely paternal in its origin, (mostly with a 46 XX karyotype) with no presence of identifiable fetal or embryonic tissues. 13% of complete molar gestations have a ( 46 XY karyotype) which are suggested to occur when an empty ovum is fertilized by two sperms.

Partial mole: in general have a triploid karyotype, that result from the fertilization of a normal ovum with two sperms. Non triploid partial H moles have been found, although it has been suggested that misdiagnosis of non-triploid partial H moles as early complete H moles. (1)

**Diagnosis:**

History and examination

1. Vaginal bleeding was the commonest presenting symptom of molar pregnancy that occur in (89%- 97%) of patient.

Hyperemesis gravidarum related to high levels of circulating estrogen. Due to the earlier diagnosis now, only 8% of patients presenting with this presentation, as compared with 26- 29% previously. Preeclampsia is seen in patients with high hCG levels and large size uterus and is observed in (12-27% ) of the patients in comparison to only ( 1.4% ) of the patients at the New England Trophoblastic Disease Center (NETDC).(11) (

Another important clinical presentation of H mole pregnancy, is now seen much less frequently, is hyperthyroidism. Till now it is not clear whether hCG is stimulator of the thyroid gland as data are conflicting. Significant clinical hyperthyroidism happens in patients with high hCG levels. (16) Lage size uterus is seen in patients with significant elevation in hCG secondary to extensive proliferation of trophoblastic tissue. Formerly, large size uterus was observed in about (38-51%) of the patients with GTD.

Theca lutien cysts more than 5 cm in diameter were historically present in (46%) of patients with h.mole. Sometimes growing to 6-12 cm in diameter and may get as large as 20 cm. These cysts are usually bilateral and contain amber or serosanguineous colored fluid. (12)

Ultrasound examination 2.

Ultrasound is most reliable and sensitive investigation for the diagnosis of molar pregnancy although early H moles may be difficult to distinguish from degenerated chorionic tissue.(12)

3. Serum human chorionic gonadotrophin(hCG) levels: Human chorionic gonadotrophin (hCG) is a glycoprotein produced predominantly by the syncytiotrophoblast cells, consists of two different subunits joined non covalently. With the exception of a few atypical cases of placental site trophoblastic tumor, hCG is always expressed by trophoblastic cells in persistent GTD. The hCG level measurement allows estimation of the number of proliferating cells, forming a key part in the assessment of patients disease risk and regarded as a simple method for following the response to treatment .(13)

**Management**

a. Evacuation by dilation and suction curettage of the uterus is the first step in treatment even when the uterus has enlarged beyond the size expected for the pregnancy of 20 weeks.
b. Hysterectomy could be a treatment option for patients who do not desire future fertility. Hysterectomy gets rid of the risk of local invasion, but does not prevent metastasis and the need for careful follow up of hCG surveillance still mandatory.(14) Malignant gestational trophoblastic neoplasia may develop even after hysterectomy. (1)
c. In partial mole, where the size of the fetal parts is small, medical termination can be used.
d. Data regarding management of molar pregnancies with mifepristone are limited; this agent should not be used at present because it increases the uterine sensitivity to prostaglandins. (15)
e. Follow up:
   Most of patients with molar pregnancies do not need further treatment after evacuation. The residual trophoblastic tissue will fail to proliferate and the cells stop growing and their numbers reduce, the hCG levels

return back to normal.(15) However, till now there is no effective and precisre prognostic system that help distinction between the patients who after evacuation will develop persistent disease from the majority who will not. For this reason all women with molar pregnancy should be registered and keep cntact for an hCG level follow up system. The use of this system allows an early detection of patients in whom the disease is continuing to proliferate and also allowing the careful watch of patients with more slowly falling hCG, in an aim of reducing the use of unnecessary chemotherapy.(15)

Indication for chemotherapy treatment during surveillance for Patients with molar pregnancy include the following: (3)

1) high hCG level six months after evacuation (even if it is falling)
2) hCG plateauing in 4 consecutive serum samples over a period of three weeks or more.
3) Level of hCG>20,000 IU/L in a period more than four weeks after evacuation .
4) Rising level of hCG in three consecutive serum samples over at least 2 weeks.
5) Pulmonary, vaginal or vulval metastasis unless the hCG level is decreasing.
6) Heavy vaginal bleeding or gastrointestinal / intraperitoneal bleeding .
7) Histological feature of choriocarocinoma .
8) Brain, liver or gastrointestinal metastasis or pulmonary metastasis > 2 cm on CXR.

Women should be advised not to get pregnant until hCG level has been normal for six months because of high risk of a second H mole in a subsequent pregnancy and all future pregnancies should be checked by ultrasonography early in their course.(16)

**Aim of Study:**

To study the types, complications, management and outcomes of gestational trophoblastic disease (GTD) and those with irregular follow-up in Baghdad Teaching Hospital through an observational descriptive -based approach.

**Patients and methods :**

Setting: Department of Maternity/ Baghdad Teaching Hospital – Medical City, Baghdad, Iraq .Patient's selection :During the period from January 2013 to January 2014, (60) patients admitted to our hospital were diagnosed and registered to have GTD on the basis of histopathological report, were enrolled in this study. During this period, analysis of patients′ data was done regarding their age, residence, parity, blood group, type of molar pregnancy, 1st clinical presentation, percentage of patients who developed persistent GTD and needed further management with chemotherapy and follow up, their outcome (remission, complications, lost to follow up), history of prior molar pregnancy, then complete medical and gynecological examination was done for each case. All patients were followed up by serial B-hCG titer according to WHO protocol except those who were lost to follow up. Each patient has a hand book in which her complete information about her

condition is documented. The results were established from the obtained data and then comparison was done with other studies.

**Statistical analysis**

Analysis of data was carried out using the available statistical package of SPSS-20 (Statistical Packages for Social Sciences- version 20). Data were presented in simple measures of frequency, percentage, mean, standard deviation, and range (minimum-maximum values). The significance of different percentages was tested using chi-square test (□2- test). Statistical significance was considered whenever the P value was equal or less than 0.05.

**Results**

Thirty six out of 60 patients (60%) developed persistent gestational trophoblastic disease and required chemotherapy, 18 patients out of 60 (30%) had irregular follow up, while 6 patients (10%) had spontaneous remission as shown in **figure (1).**

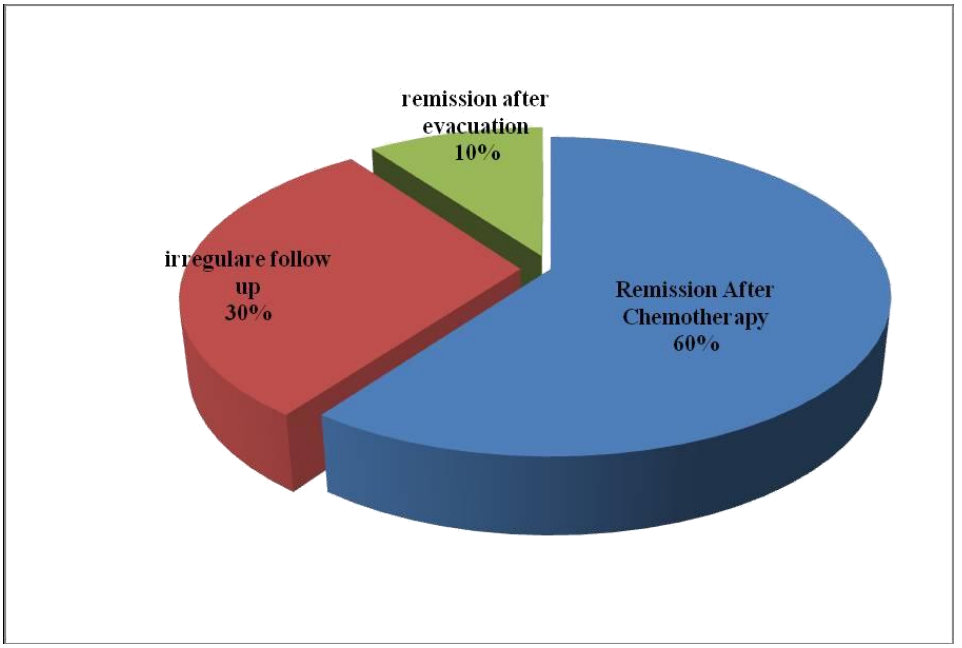


Figure (1): outcome of patients with gestational trophoblastic disease

Figure (2) show that (55.5%) of patients were treated by single agent chemotherapy ( methotrixate), while (33.4%) were managed by single agent-chemotherapy then shifted to multi-agent chemotherapy at oncology unit and (11.1%) of them were treated by multi-agent chemotherapy since diagnosis

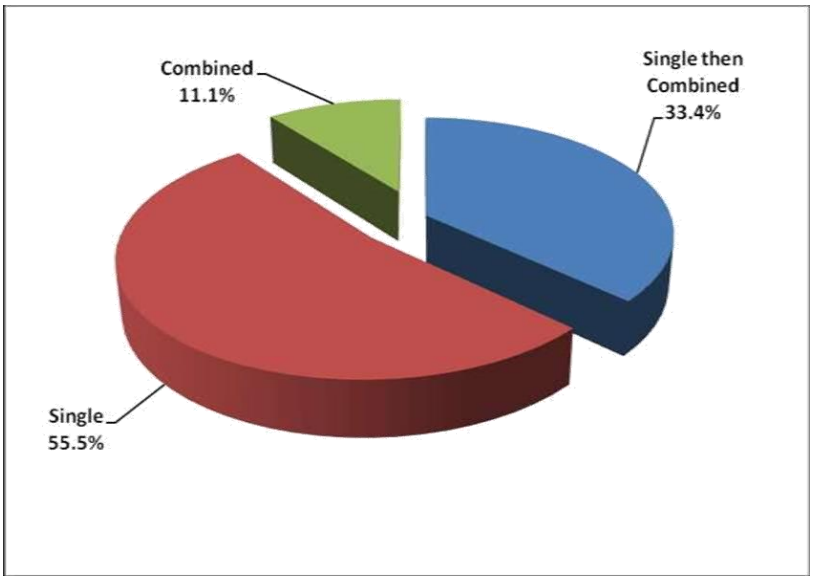


Figure 2: Types of chemotherapy that patients required regarding their management

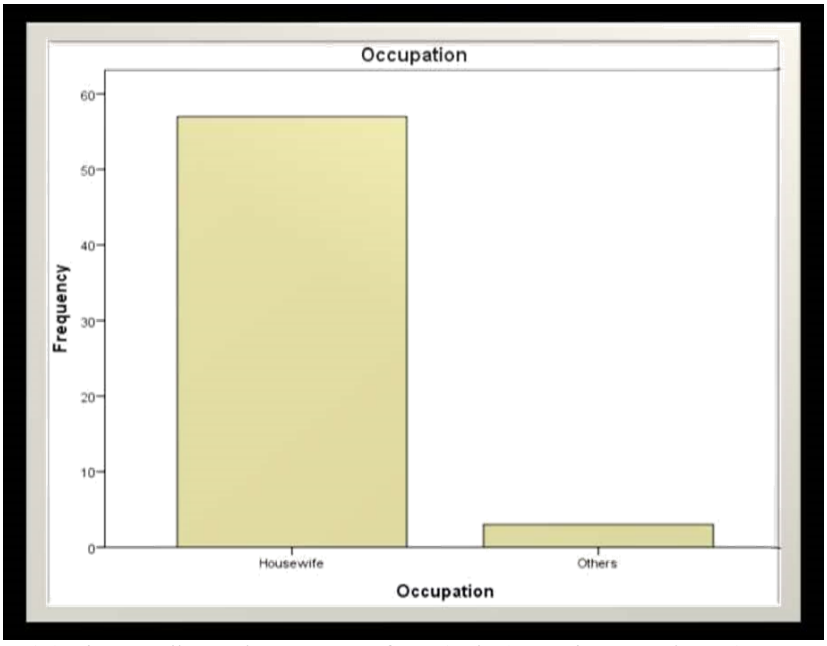


Figure (3) shows 57 patients out of 60 (95%) are housewives (occupation)

Table ( 2 ) shows, patients' age ranged from (15 to 47) years with mean of 26.4 years, an important percentage (50%) of GTD was found among age

group of (15-25) years old. The age group more than (45) years old was (4) cases (6.7%). Regarding parity, highest percentage (70%) is multi-parous. (41) Patient out of 60 (68.3%) are from rural region. Regarding their blood group 38.3 % are of blood group O.

Table (2): basic demographics of all patients in our study

| BASIC DEMOGRAPHICS | | | | |
|---|---|---|---|---|
| Characteristic | range | no.(60) | 100% | |
| age (y) | 15-24 | 30 | 50 % | |
| | 25-34 | 13 | 21.7 % | |
| | 35-44 | 13 | 21.7 % | |
| | More than 44 | 4 | 6.7% | |
| Mean age ± SD (Range) | 26.4±9.3 | (15-47) | | BASIC |
| DEMOGRAPHICS | no.(60) | 100% | | |
| parity | | | | |
| Nulli-parous | | 18 | 30 % | |
| Multi-parous | | 42 | 70 % | |
| Residence | | | | |
| rural | 41 | | | 68.3% |
| urban | 19 | | 31.7% | |
| Occupation | | | | |
| housewife | 57 | | 95 % | |
| others | 3 | | 5 % | |
| blood group | A | 21 | 35 % | |
| | B | 12 | 20 % | |
| | O | 26 | 43 % | |
| | AB | 1 | 1.7 % | |

Table ( 3) highest percentage of patients presented with vaginal bleeding 42 (70%), 40 patients ( 67 % ) had uterine size larger than date, Ten patients ( 17 % ) had theca lutein cyst, 3 cases ( 5 % ) had metastasis and 2 cases had metastasis to the lung and one to the liver

Table (3): Main presentation of the patients in our study

| Presentation of Ptients with GTD Characteristic (n=60) | No | (%) |
|---|---|---|
| Vaginal bleeding | 42 | 70 |
| Hyper emesis gravidarum | 32 | 53 |
| Theca lutein cysts | 10 | 17 |
| Total metastasis | 3 | 5 |
| lung | 2 | 3.3 |
| liver | 1 | 1.7 |

| | | |
|---|---|---|
| Uterus larger than dates | 40 | 67 |
| Hypertension | 8 | 13 |
| cervical growth | 1 | 1.7 |

Table (4) : shows 42 patients out of 60 (70%) had complete molar pregnancy and only 18 patients (30%) had partial molar ptrgnancy. those who presented with vaginal bleeding, 32 of them (53%) had complete molar pregnancy..

Table (4) relationship between the type of molar pregnancy and presenting symptoms

| n:number of patients presentation n*:total number (60) | | Type of molar pregnancy | | | | |
|---|---|---|---|---|---|---|
| | | Complete (n/n*)% | Partial (n/n*)% | Total | Chi-square P-value | decision |
| presentation | Vaginal bleeding | 32 (53%) | 10 (16.7%) | 42 (70%) | | |
| | Pass vesicle | 4 (6.7%) | 1 (1.7%) | 5 (8.3%) | | |
| | Abdominal pain | 3 (5%) | 5 (8.3%) | 8 (13.3%) | | |
| | Vaginal discharge | 3 (5%) | 2 (3.4%) | 5 (8.3%) | | |
| | Total | 42 (70%) | 18 (30%) | 60 (100%) | 0.02 | s |

Table (5) shows 41 patients out of 60 (68.3%) from rural area, 22 of them (36.7%) got remission following after chemotherapy. 36 patients (60%) had remission after chemotherapy, 6 patients (10%) got remission following evacuation while 18 patients (30%) had irregular follow-up.

Table (5): outcomes in relation to residence and blood group in patients with gestational trophoblastic disease

| n: number of patients residence and blood group n*: total number (60) | | OUTCOME | | | Total | CHI-SQUARE P-VALUE | DECISION |
|---|---|---|---|---|---|---|---|
| | | Remission after chemotherapy (n/n*) | remission after evacuation (n/n*)% | lost to follow up (n/n*) | | | |
| **Residence** | rural | 22(36.7%) | 6(10%) | 13(21%) | 41(68.3%) | 0.001 | HS |
| | urban | 14(23.3%) | 0(0%) | 5(8.3%) | 19(31.7%) | | |
| | total | 36(60%) | 6(10%) | 18(30%) | 60(100%) | | |
| **blood group** | O | 19(31%) | 2(3.3%) | 5(8.3%) | 26(43%) | | |
| | A | 11(18.3%) | 2(3.3%) | 8(13.3%) | 21(35%) | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | B | 6(10%) | 2(3.3%) | 4(6.7%) | 12(20%) | | |
| | AB | 0 | 0 | 1(1.7%) | 1(1.7%) | | |
| | total | 36(60%) | 6(10%) | 18(30%) | 60(100%) | 0.005 | HS |

Table (6): shows Eleven patients out of 18 those with irregular follow up had uterine size larger than date. 27 patients out of 36 those who got remission following chemotherapy had uterine size larger than date pre-evacuation while 4 patient out of 6 those who got spontaneous remission following evacuation had uterine size with date.

Table 6: relationship between outcome of the patients and their uterine size pre-evacuation

| | | outcome | | | | CHI-SQUARE P-value | DECISION |
|---|---|---|---|---|---|---|---|
| | | remission after chemotherapy | remission after evacuation | lost to follow up | total | | |
| uterine size pre-evacuation | larger than date | 27(45%) | 3(3.3%) | 11(18.3%) | 40(66.7%) | 0.005 | HS |
| | with date | 9(15%) | 4(6.7%) | 7(11.7%) | 20(33.35%) | | |
| | total | 36(60%) | 6(10%) | 18(30%) | 60(100%) | | |

Table (7): shows 12 patients (66.7%) out of 18 those who have irregular follow up had complete molar pregnancy and 6 of them had partial molar pregnancy, 8 patients (44.4%) present with choriocarcinoma, 6 patients (38.8%) present with vaginal bleeding while 3 patients (16.75) present with metastasis .

Table (7) relationship between presenting symptoms of patients who have irregular follow up with type of molar pregnancy

| 18 PATIENTS OUT OF 60 WHO LOST TO FOLLOW | | TYPE OF MOLAR PREGNANCY | | TOTAL | CHI-SQUARE P-value | DECISION |
|---|---|---|---|---|---|---|
| | | Partial n | Complete n* | | | |
| 1st presentation after period of irregular follow up | choriocarcinoma | 3(16.7%) | 5(27.7%) | 8(44.4%) | 0.021 | S |
| | metastasis | 0 | 3(16.7%) | 3(16.7%) | | |
| | vaginal bleeding | 3(16.7%) | 3(16.7%) | 6(33.3%) | | |
| | cervical invasion | 0 | 1(5.7%) | 1(5.7%) | | |
| | Total | 6(33.3%) | 12(66.7%) | 18(100%) | | |

n- Number of patients presentation after period of irregular follow up.

n*- total number of patient with irregular follow up (18).

Table (8): shows 16 patients (88.8%) out of 18 those who had irregular follow up got remission, one of them underwent hysterectomy, while unfortunately 2 patients (11.1%) out of 18 died .

Table (8): Relationship between outcome of patient with irregular follow up and their presentation

| 18 PATIENT OUT OF 60 WHO LOST TO FOLLOW UP | | OUTCOME | | | CHI-SQUARE P-VALUE | DECISION |
|---|---|---|---|---|---|---|
| | | Remission (n/n*%) | Dead (n/n*%) | Total | | |
| presentation after period of irregular follow up | choriocarcinoma | 8(44.4%) | 0 | 8(44.4%) | 0.000 | VHS |
| | metastasis | 2(11.1%) | 1(5.7%) | 3(16.7%) | | |
| | vaginal bleeding | 5(27.8%) | 1(5.7%) | 6(33.3%) | | |
| | cervical invasion | 1(5.7%) | 0 | 1(5.7%) | | |
| Total | | 16(88.8%) | 2(11.1%) | 18(100%) | | |

n: number of patients' presentation
n*: total number (18)

Table(9): shows higher percentage, 9 patients out of 18 (50%) those who had irregular follow up are of age group (15-25), 12 patients out of 18 (66.7%) multi-parous, 13 patients (72.2%) from rural area, 17 patients (94.4%) house wives and 11 patients (61.1%) of blood group A.

Table (9): basic demographics of patients who had irregular follow- up

| BASIC DEMOGRAPHICS | | | |
|---|---|---|---|
| 18 out of 60 | Range | No. | % |
| Age groups | 15-24 | 9 | 50 |
| | 25-34 | 2 | 11.1 |
| | 35-44 | 4 | 22.2 |
| | 45 and above | 3 | 16.7 |
| Parity | Nulli-parous | 6 | 33.3 |
| | Multi-parous | 12 | 66.7 |
| Residence | Rural | 13 | 72.2 |
| | Urban | 5 | 27.8 |
| Blood Groups | A | 11 | 61.1 |
| | B | 2 | 11.1 |
| | O | 5 | 27.8 |
| | AB | 1 | 5.6 |
| Occupation | Housewife | 17 | 94.4 |
| | others | 1 | 5.6 |
| Total | | 18 | 100 |

**Discussion**

During the period of our study, there were 60 patients with GTD were included in our study. Despite giving adequate counseling for all patients with hydatidiform mole regarding the possible sequel of their disease, 8 patients out of 60 (13.3%) treated for choriocarcinoma, this result disagree with result carried out by Zaineb AL Yasin et al/ Basrah General Hospital/Iraq,(2007)(17), showed 3 patients out of 137 (2%) were treated for choriocarcinoma .

Complete molar pregnancy is the commonest in our study, Forty two (42) patients out of 60 (70%) while partial mole were 18 patients (30%) this agree with study done by Zaineb AL Yasin et al Iraq/(17), she showed majority of cases were complete molar pregnancy (90%) and only (10%) were partial .Eighteen patients out of 60 (30 %) had lost to follow up. Amaka N. Ocheke et al in Nigeria(2011)(18), reported that (12%) of their patient with molar pregnancy lost to follow up, this mean that our patients are more liable to have worse outcome and follow-up of patients in our country is poor.

Vaginal bleeding was the commonest 1st presenting symptom (70%) among our patients, which is noted to be the commonest symptom by Riyadh A. Al-Baldawi/Baghdad Teaching Hospital/2006, (19) and Mahrukh Fatima et al Pakistan2011, (20) it presented in 97% of their patients .Although the incidence of GTN is 15-20% of patients with complete hydatidiform mole and 2% of partial hydatidiform moles, (21) there is 36 patients out of 60 (60 %) in our study (table 5) developed gestational trophoblastic neoplasia, while in a study performed by Samieh Karimi et al in Iran (2014),(22) 44.7% diagnosed with persistent GTD. Possible explanations for this high incidence probably that, both studies are conducted in a tertiary centers in which most of patients are complicated and presented at advanced stage. Although overall 90% of patients with molar pregnancy will not need any additional treatment following their evacuation(1), only 6 patients out of 60 (10%) in our study spontaneously got remission following evacuation (table 4) and didn't require additional treatment mostly for the same reason.

Thirty patients(30) out of 60 (50%) in our study were young age group (15-24) year, as maternal age has consistently been identified as an important risk factor and extremes of age is known risk factors (1), this agree with study carried out by Zaineb AL Yasin et al Iraq/Basrah/ (17) she showed (36%) of her patients of age group (20-29) year. But disagree with study done by Shahla Karim Alaf/ Maternity Teaching Hospital in Erbil/2008(23), she showed that (62%) of cases were in the age group of 20- 39 years. The difference between studies could be related to racial factor .

Two women out of 18 patients (11.1%) both of them are nulliparous and are lost for follow up, unfortunately died. 1st patient 18 years old presented many months after period of irregular follow up having metastatic deposits in the lungs and developed adult respiratory distress syndrome, 2nd patient she was 15 years old presented with enlarged uterus about 20 weeks gestation and heavy

vaginal bleeding many months after evacuation as she neglected her follow up and she died soon after admission. This result is comparable to that performed by Sushruta et al in India (2007) (24)who found that mortality rate with GTD are( 2. 7% ) in their study, this could be due to poor knowledge of patients about their disease, in addition to delayed diagnosis. Hysterectomy usually does not improve the outcome of GTN and additional coarse of chemotherapy post operatively is indicated (25) ,this goes with finding in our study when two cases underwent abdominal hysterectomy, one because of cervical growth and hemorrhage, the other because she was 47 years old and completed her family as she presented with high risk score, both patients received chemotherapy post operatively and got complete remission . We found that there was statistically significant difference in the incidence of hydatidiform mole among multi-parous rather than nulliparous women, higher percentage seen in multi-parous as shown in (table 3), this result differs from the research of Adam Wolf berg, et al 2004(26); that shows higher percentage in nulli-parous .

In our study, higher incidence of persistent GTD (66.7%) was found among those patients with uterine size larger than date on presentation, as shown in table (3), this result agree with study done by Shahla Karim Alaf/ Maternity Teaching Hospital in Erbil/2008.(23) she showed the uterine fundal level was larger than the gestational age in 45% of the cases, but our study different from results obtained by Adam Wolf berg et al, USA (2004) (26) who found that women who developed gestational trophoblastic neoplasia didn't have uterine size larger than date on presentation (85 % compared with 56.3%), (p=0.4). This difference could be related to delayed diagnosis in our country as patients usually seek medical advice after having an attack of vaginal bleeding; while in the developed countries routine early pregnancy scan can lead to diagnosis at earlier gestational age and smaller uterine size. Another comparison done with a study performed by Mahrukh et al in Pakistan (2011), this study Shows more than (70%) have uterine size larger for date on presentation, result obtained by this study comparable to that of our study. (20) Despite patients with blood group (A) are more prone to develop molar pregnancy than Patients with blood group (O)(27) in our study we found that patients with blood group (O) 26 out of 60 (43%) were more liable to molar pregnancy than those blood group (A) 21 out of 60 (35 %), while those who had irregular follow up most of them are of blood group A, 9 patients out of 18 (50%). This result is comparable with study done by Adam Wolf berg (26) .Ther is another study done by Lorigan et al in India (2000) who shows that higher risk of molar pregnancy is among women with blood group B .(28)

Although GTN is considered the most curable gynecologic malignancy and patients with low-risk disease (score 0-6) have 5-year survival rate of nearly 100% and falls to 86% in high-risk disease (score ≥7). The majority of patients with low-risk disease are cured with single agent chemotherapy, either methotrexate or actinomycin D, while patients with high-score is associated with worse outcome if they have inadequate intensity of initial treatment. (27).

**Conclusions and Recommendations:**

Our study showed that, the higher proportion was in age group 15-25, among patients came from rural area, multi-parous women of Blood group O. While Most of those with irregular follow up are of blood group A, in age group 15-25, from rural area, multi-parous, and had complete molar pregnancy.

The disease spectrum in GTD varies from benign to malignant. Although it can almost always be treated successfully, but also can be fatal if untreated properly. It is important that the malignant condition be diagnosed early for intervention and chemotherapy, which is curative in almost all cases. The management of gestational trophoblast disease in our hospital does not differ from the protocols in other centers in the world, however, Follow up of patients is the real problem for both patients and doctors because no special center for GTD and no registration to patients in proper way, with lack of education and knowledge about this disease among our population, this necessate actual steps to establish a centre for managing patients with GTD in every country including Iraq.

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