

Characteristics of Gestational Trophoblastic Disease at Prof. Dr. I.G.N.G. Ngoerah Hospital, Denpasar from 1st January 2020 to 31st December 2021

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ABSTRACT

GTD is a rare abnormal condition of pregnancy, where the condition occurs when trophoblast cells proliferate uncontrollably so that it develops into an abnormal pregnancy. Abnormal pregnancy can lead to various negative effects such as vaginal bleeding, shortness of breath, and others. The high incidence of GTD is still not well documented to date. It is important to manage GTD appropriately to minimize acute complications and identify gestational trophoblastic tumor promptly. In this study, studyrs took data from the oncogynecology register book regarding GTD and then presented it as descriptive data so that descriptive data analysis was carried out in the form of tables and narratives. The results of this study showed that GTD was highest in the age range of 31-35 years, parity 2, clinical symptoms of vaginal bleeding, previous pregnancy history with hydatidiform mole, gestational interval of 4 months or less, β -HCG level more than 100.000 mIU/ml, no metastases, histopathology of complete hydatidiform mole, stage I GTD, and receiving metotrexate chemotherapy.

Keywords: abnormal pregnancy, gestational trophoblastic disease, oncogynecology.

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I. INTRODUCTION

Gestational Trophoblastic Disease (GTD) is a rare abnormal condition of pregnancy. This condition occurs when trophoblast cells proliferate uncontrollably so that it develops into an abnormal pregnancy. There are variations across regions in terms of incidence, clinical characteristics, morbidity and mortality rates of GTD related to differences in patient characteristics, risk factors and access to health services. In addition to these conditions, in developing countries including Indonesia, epidemiological data regarding risk factors, clinical characteristics, and prognosis are also not yet available. These problems will certainly be one of the obstacles in efforts to prevent early detection and adequate management of GTD.

The incidence of GTD in various countries is reported to be quite rare. Incidence in the UK accounts for 1/714 live births, with ethnically varied Asian women having a higher incidence than non-Asian women (1/387 versus 1/752 live births). Various epidemiological studies have also reported wide variations in the incidence of GTD. The incidence of

hydatidiform mole cases, in most parts of the world, is 1 per 1000 pregnancies. The national epidemiology of hydatidiform mole in Indonesia is still not known with certainty because generally the incidence of hydatidiform mole in Indonesia is taken based on hospital data (hospital based). In a previous study conducted at RSUP Prof. Dr. R. D. Kandou Manado in 2002 found cases of hydatidiform mole 1:123 pregnancies and in 2003 found cases of hydatidiform mole 1:245 pregnancies [1], [2].

Vaginal bleeding is the most common symptom reported in patients suffering from GTD, with an incidence rate of 97%. Tightness, abdominal distension and a significant increase in serum β -HCG levels were reported in the symptoms and findings of GTD cases. Serum hCG is a good biomarker that can be checked for disease progression, response to therapy and subsequent post-treatment monitoring [3], [4].

Most women who suffer from GTD are successfully diagnosed and managed by maintaining their reproductive function. It is important to manage GTD appropriately to minimize acute complications and identify gestational

trophoblastic tumor (GTT) promptly. Patients with GTT should be managed in a central health facility or with a consultant experienced in the complex multimodality care of GTD patients. However, widespread and statistically accurate study on GTD is limited. Seeing this, the study aimed to observe and determine the characteristics of GTD cases at Prof. Dr. I.G.N.G. Ngoerah Hospital, Denpasar.

II. METHODS

This study was a retrospective descriptive study using secondary data derived from the patient's medical record. This study took place at the Obstetrics and Gynecology Polyclinic, gynecology inpatient and Medical Record Installation at Prof. Dr. I.G.N.G. Ngoerah Hospital Denpasar. The time of this study was carried out from January to June 2022.

The sample of this study were all new GTD cases at Prof. Dr. I.G.N.G. Ngoerah Hospital Denpasar for the period 1st January 2020 to 31st December 2021, which met the study inclusion criteria. The inclusion criteria for this study were new cases of GTD diagnosed at Prof. Dr. I.G.N.G. Ngoerah Hospital Denpasar for the period 1st January 2020 to 31st December 2021, whose data were obtained from medical records. The exclusion criteria for this study were missing or incomplete medical record data. The sampling method used total sampling technique.

Study materials and instruments include data on the oncogynecology case register book at Prof. Dr. I.G.N.G. Ngoerah Hospital and medical records for GTD cases during the period 1st January 2020 to 31st December 2021. The study data obtained from the oncogynecology register book and the Medical Record Installation at Prof. Dr. I.G.N.G. Ngoerah Hospital Denpasar were collected and entered into a collection sheet. data. The data obtained in the study is descriptive data so that descriptive data analysis is carried out which is displayed in the form of tables and narratives.

III. RESULTS

During the study period, there were 28 cases of Gestational Trophoblastic Disease who were treated at Prof. Dr. I.G.N.G. Ngoerah Hospital from 1st January 2020 to 31st December 2021. The profile of the GTD patients can be seen in Table I.

IV. DISCUSSION

A. Characteristics of GTD Cases by Age

In this study, the highest incidence of GTD was in the age range of 31-35 years, which was 25% (7 cases). This study is in accordance with a study conducted before where the incidence of GTD is most commonly found at the age of 31 years. Another study found that the incidence of GTD was mostly found in the 20-30 year age range, which was 54,8% [5], [6].

There were 13,3% of cases found in young people under 20 years old, and 45% cases at age over 35 years, the highest was found in the age range of 20-35 years. Where it is obtained at a young age under 20 years has an OR of less than 1 so that it is obtained as a protective factor against the

TABLE I: PATIENTS PROFILE WITH GTD AT PROF. DR. I.G.N.G. NGOERAH HOSPITAL FROM 1ST JANUARY 2020 TO 31ST DECEMBER 2021

Profile	Frequency	Percentage
Age (Years)		
≤ 20	0	0
21-25	4	14,3
26-30	3	10,7
31-35	7	25,0
36-40	3	10,7
41-45	5	17,9
> 45	6	21,4
Parity		
0	6	21,4
1	5	17,9
2	7	25,0
3	6	21,4
≥ 4	4	14,3
Clinical Symptoms		
Bleeding	26	92,9
Enlarged belly	1	3,6
Stomach pain	1	3,6
Previous Pregnancy History		
Hydatidiform mole	23	82,1
Abortion	2	7,1
Aterm pregnancy	3	10,7
Interrupted ectopic pregnancy	0	0
Previous pregnancy interval (months)		
≤ 4	12	42,9
4-6	6	21,4
7-12	2	7,1
≥ 12	8	28,6
β-HCG level (mIU/ml)		
≤ 103	8	28,6
103-104	6	21,4
104-105	3	10,7
> 105	11	39,3
Histopathology		
Complete Hydatid Mode	12	42,9
Partial Hydatidiform Mole	10	35,7
Invasive mole	4	14,3
Choriocarcinoma	2	7,1
Tumor Metastasis		
None	24	85,7
Yes	4	14,3
Lungs	1	3,6
Bone	3	10,7
Stage		
I	23	82,1
II	1	3,6
III	4	14,3
IV	0	0
Therapy		
MTX	13	46,4
EMACO	12	42,9
Hysterectomy Operation	3	10,7

incidence of GTD, and there is an increased risk of 10x more in those aged over 40 years. Where at the old age group there is a decline in reproductive function, so that it will affect the aging of the egg cell causing abnormal gametogenesis. It is possible that at a very young age and old age, cytogenic abnormalities are more common and can cause pathological ovum, this abnormality then causes GTD. [7]

B. Characteristics of GTD Cases Based on Parity

In this study, the incidence of GTD was most often found in parity 2, which was 25% (7 cases). This study is in accordance with a study conducted before where the incidence of GTD was most commonly found in parity 2. Another study found that the incidence of GTD was most

commonly found in parity 2 [5], [6].

There is study stated that the relationship between parity and the incidence of GTD still cannot be explained, but in his study it was stated that parity 1,5 will increase the risk of GTD. In pregnancy, trophoblast cells always circulate in the blood circulation throughout the mother's body, resulting in an immunological reaction between trophoblast cells and the immune system in the mother's body. Under these conditions, the shorter the gestational interval, the more impaired maternal immunological reactions will be, thereby increasing the incidence of hydatidiform mole pregnancies in high-parity mothers [8], [9].

C. Characteristics of GTD Cases Based on Clinical Symptoms

In this study, the highest incidence of GTD was in the age range of 31-35 years, which was 25% (7 cases). Another study found the incidence of GTD is most commonly found at the age of 31 years. Study conducted before found that the incidence of GTD was mostly found in the 20-30 year age range, which was 54,8% [5], [6].

D. Characteristics of GTD Cases Based on Previous Pregnancy History

In this study, the most common history of previous pregnancies that resulted in the occurrence of GTD was hydatidiform mole, which was 23 cases (82,1%). Another study found the most common history of pregnancy before the occurrence of GTD was hydatidiform mole, which was 54,9%. Another study obtained a history of pregnancy before the occurrence of GTD, the most of which were at term pregnancy by 50%, then abortion and hydatidiform mole, respectively by 30% and 20% [5], [10].

E. Characteristics of GTD Cases Based on the Distance of Previous Pregnancies

In this study, the distance between a history of previous pregnancy and the occurrence of GTD was at most 4 months or less, as many as 12 cases (42,9%). Another study obtained the same results, where the distance between a history of previous pregnancies and the occurrence of GTD was less than 4 months by 64,2% and more than 4 months by 35,8%. [11]

F. Characteristics of GTD Cases Based on β -HCG Levels

In the study, the level of β -HCG at the time of initial diagnosis of GTD was more than 100.000 mIU/ml, which was 39,3%. Another study found that the highest levels of β -HCG at the time of diagnosis of GTT were more than 100.000 mIU/ml with an average β -HCG level of 423.105 mIU/ml. Another study also found that β -HCG levels at the time of diagnosis of GTT were at most between 1000 and 10.000 mIU/ml in 50% of cases, followed by more than 100.000 mIU/ml and between 10.000 to 100.000 at 30% and 20% respectively [10], [12].

G. Characteristics of GTD Cases Based on the Location of Metastases

In this study, 85,7% of patients with GTD had no metastases and 14,3% had metastases. In GTD with metastases, 25% of GTT cases found metastases in the lungs and 75% in bone. A study before found that from 20% of GTT cases that had metastases, 57% of cases had lung metastases,

28% brain and 14% vagina. Another study found that GTT metastases were most often found in the lungs, at 70%, followed by the brain and liver, at 12,1% and 2,8%, respectively. [10], [12]

H. Characteristics of GTD Cases by Histopathological Type

In this study, the histopathological type of patients with GTD obtained was 42,9% in the form of a complete hydatidiform mole. Another study obtained the same results where the histopathological types found in GTT were 49,6% in the form of hydatidiform mole, 40,2% in the form of choriocarcinoma, and 10,2% in the form of Placental Site Trophoblastic Tumor (PSTT) [5].

I. Characteristics of GTD Cases by Stage

In this study, most cases of GTD were found in stage I, amounting to 82,1% while stage II, III and IV were 3,6%, 14,3% and 0%, respectively. Another study obtained the same results where the majority of cases of GTD were found in stage I, amounting to 76.1% while stage II, III and IV were 1,1%, 19, respectively 5% and 3,3%. Another study also showed that 75% of the patients studied were at stage I. This may be because the main complaint most often experienced by patients is vaginal bleeding, so patients come early for a check-up so they can be detected at an early stage [5], [13].

J. Characteristics of GTD Cases Based on Therapy

In this study, most cases of GTD received 46,4% Methotrexate (MTX) chemotherapy, while 42,9% received combination chemotherapy of Etoposide, MTX, ACD, Cyclophosphamide, Oncovine (EMACO). Another study obtained the same results where most cases of GTD received MTX single chemotherapy of 73,1% [5].

Most of the GTT cases received MTX and ACD single chemotherapy, 51% while EMACO combination chemotherapy was 40%. Where the age of the patient influences the choice of management for GTD cases. Hysterectomy is not the treatment of choice in middle age who still need their reproductive function, in contrast to the elderly who usually don't need their reproductive function anymore. In making therapeutic decisions, of course considering other factors such as parity and bleeding that may occur [14].

V. CONCLUSION

GTD is a rare abnormal condition of pregnancy. In Indonesia, the incidence of GTD is very difficult to quantify because not all cases are reported or recognized. Based on this study, the most GTD was in the age range of 31-35 years, parity 2, clinical symptoms of vaginal bleeding, history of previous pregnancy with hydatidiform mole, gestational interval of 4 months or less, β -HCG level more than 100.000 mIU/ml, no metastases, histopathology of complete hydatidiform mole, stage I GTD, and receiving metrotrexate chemotherapy.

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