

EPIDEMIOLOGY OF GESTATIONAL TROPHOBLASTIC DISEASE IN GOVERNMENT MATERNITY HOSPITAL, TIRUPATI

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SUMMARY

In the present study of 50 cases of GTD during the period 1989-91, the following conclusions have been arrived at. The incidence of GTD is very high when compared to that found in Western countries (such as USA, Europe). The higher incidence may be attributed to protein malnutrition, as most patients who developed GTD came from a low socio-economic group. The incidence of various types of GTD is as follows : vesicular mole 1 in 245 pregnancies (4.05 cases in 1000 pregnancies), invasive mole 1 in 3080 pregnancies, choriocarcinoma 1 in 12240 pregnancies, partial mole 1 in 6120 pregnancies, dizygotic twin with complete mole 1 in 12240 pregnancies. Most of the patients with GTD were found to be in age group 21 to 30 years. Vesicular mole is relatively more common in second and third gravidae. Blood group of the patient or her consort, bear no relationship to the incidence of GTD in the present series. Consanguinous marriages were found in 56% of patients with GTD. Religion or community of the patient have no relationship to the occurrence of GTD. There is a higher incidence of GTD in the months of April, May, July and September.

INTRODUCTION

The close relationship of hydatidiform mole and choriocarcinoma is reflected in

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Accepted for Publication on 20.07.1994.*

the epidemiology of these disease. Although choriocarcinoma can appear after any conceptus the risk is greatly increased following the occurrence of a mole. Partly, but probably not entirely,

because of this direct link, the geographic pattern of occurrence of hydatidiform mole and choriocarcinoma are closely correlated. The two conditions also occur more often than expected in the same or in related women.

It is an accepted dogma that the trophoblastic disease occurs with much greater frequency in the far east and other parts of the third world than in the western hemisphere. The exact cause for this increased incidence is not known despite efforts to find a specific causative factor.

The epidemiological factors which may account for the variations in the incidence of this disease have been thoroughly evaluated in the present study under different headings as follows : (1) Age, (2) Parity, (3) Race & Religion, (4) Socioeconomic condition, (5) Blood groups, (6) Consanguinity and (7) Seasonal variation.

MATERIALS AND METHODS

The present study was conducted in Government Maternity Hospital, Tirupati from January, 1989 to December, 1991. During the 3 years period 50 gestational trophoblastic disease cases were registered in the institution and data of the patients was collected. In the same

period 12,240 pregnancies were recorded. Out of them there were about 10,740 full-term deliveries, 1275 medical termination of pregnancies and 505 spontaneous abortions.

OBSERVATIONS AND DISCUSSION

1. Age

Majority of GTD occurred between 21 to 30 years which is the peak period of the fertility. Early marriage and higher birth rate is probably responsible for this high incidence. According to the joint project for study of choriocarcinoma and hydatidiform mole in Asia, the age distribution reported for Asian patients and for the United States were different. The age distribution of the patients in various Asia countries was shown to be similar.

Contrary to the accepted reports (Buckley 1984) that molar gestation is common in elderly age group and hence probably in multiparous subjects, in our study of 50 cases, 90% are below 30 years and only 10% are above 30 years of age (Table I). The average age of the patient in the present study is 29 years which is in agreement with the studies of Saxena et al., (1971).

Since the number of cases of invasive

Table I

Age-wise distribution of hydatidiform mole

Author	20 or less		21-25		26-30		31-35		36-40		41 and		Total
	No. of cases	%	No. of cases	%	No. of cases	%	No. of cases	%	No. of cases	%	No. of cases	%	
Present	7	14	29	58	9	18	2	4	2	4	1	2	50

mole is small, it is not possible to make any comments on the age distribution of this lesion except to state that there is not much difference in the age distribution pattern of hydatidiform mole and invasive mole.

2. Parity

In the present series of 50 cases of GTD 20% occurred during 1st pregnancy, 70% between Gravida 2 to Gravida 4 and 10% of patients where the gravida was 5 or more (Table II). These results concur with the study done by Sen Gupta and Konar (1984) who reported that 25% of GTD occurred during first pregnancy, 56% between G2 to G4 and in 19% the gravida was 5 or above.

Orr (1977) is of the opinion that parity did not appear to have any important influence and in 15-20 per cent cases of HM the patients are primigavidas. Similarly Marguez (1963) found that 32.8 per cent of his cases occurred in primipara

and 18.7% during second pregnancy, where as Bhaskar Rao and Shetty (1961) found that incidence of hydatidiform mole to be high in the parity group of 5 or more. In a series of 232 cases, Kalyani Kutty and Nalini (1970) reported that 25% were primis and 33% were in the parity group of 5 or above.

3. Race and Religion

In the present study the incidence of GTD in various religious communities was as follows : Hindus 92%, Muslims 4% and others 1% probably reflecting the population distribution in the community (Table III).

4. Socio-economic status

In the present study about 90% of patients come from poor socio-economic class with very poor protein intake, confirming (probable) to Acosta Sison (1959) belief of protein malnutrition as one of the causative factors. Chun et al

Table II

Parity distribution of hydatidiform mole

Author	Primi	G ₂ - G ₄	G ₅ - G ₆	G ₇ and more	Total
Present study	10 20%	35 70%	4 8%	1 2%	50

Table III

Incidence of trophoblastic disease among different religious groups

Author	Hindus	Muslims	Others
Present study	92%	6%	2%
Hospital population	92%	7%	1%

Table IV

Distribution of different blood groups in Trophoblastic disease

Author	Group A	Group B	Group O	Group AB
Present study				
Patient	7 (14%)	12 (24%)	26 (52%)	5 (10%)
Husband	13 (26%)	12 (24%)	25 (50%)	-
Hospital population	44 %	24 %	26 %	6 %

(1964), Teoh et al (1971), Ratnam and Chew (1975) also are of the opinion that various international studies have shown that poor countries were affected more than affluent ones. In contrast, Srinivas Rao and Ray (1960) mentioned that the incidence is very high viz 1 in 232 pregnancies in Japan where every one is well fed, clean and percapita income is fairly high, where as the incidence is so low in Brazil i.e., 1 in 1071 where malnutrition is rampant, thus doubting the etiology to be based on malnutrition. This is also supported by Sen Gupta and Konar (1984).

5. Relationship of GTD to blood groups

Patient

In the present study it has been noted that GTD occurred more often in group "O" patients and least in "AB" group. Table IV shows the relationship of the occurrence of GTD to blood groups. It is apparent from the figure that blood groups of the patients with HM are corresponding to the normal blood group distribution in the hospital population confirming the fact that patient's blood group has no influence on the

development of HM in the patient, a fact substantiated by the study of Radha et al (1974), which reported no significant variation in the pattern of blood group distribution in patients with HM compared to blood group distribution of Hospital population. The above results are in contrast to the study of Sen Gupta and Konar (1984), who reported a greater incidence of HM in blood group "A" patients with a decrease in group "B" patients.

Husband

In the present study the figures for the blood groups of the husbands, whose spouses were affected by GTD, almost correspond to the normal blood group distribution in the hospital population (Table IV) showing that husband's blood group does not significantly influence the occurrence of GTD in the patient, a fact substantiated by the study of Bagshawe et al (1971), Dawood et al (1971), Mittal et al (1975) who reported that ABO blood groups of patients and their husbands have not been found to be different from those of the normal population under study.

Table V
Seasonal variation in GTD in the present study 1989-1991

Month	1989	1990	1991	Total
January	-	1	1	2
February	-	4	-	4
March	2	-	2	4
April	1	4	1	6
May	3	2	2	7
June	1	1	-	2
July	1	4	4	9
August	1	1	1	3
September	5	2	-	7
October	1	2	-	3
November	-	1	-	1
December	1	1	-	2

6. Consanguinity

In the present study consanguinity is seen in 56% of the patients with GTD. So GTD is more common in consanguinous marriages when compared to the others. The above fact is supported by study of Buckley (1984), whose review suggested consanguinity as a contributory factor in the development of GTD. This is in consonance with Illiya et al (1967) who stressed about consanguinity as an important etiological factor. They are of the opinion that in parts of the oriental countries where choriocarcinoma is prevalent consanguinous marriages are also most common.

These observations are contrary to WHO scientific group (1993) report which shows no acceptable published evidence for the influence of consanguinity or family history on the incidence of GTD.

7. Seasonal variation in GTD

In the present study there was a higher incidence in months of April, May, July and September when compared to other months (Table V). In contrast there is no seasonal variation in 4½ years study of Sen Gupta and Konar (1984). Ratnam and Chew (1975) from Singapore reported an increased incidence of trophoblastic tumour cases in May and September. But this increase is not statistically significant and attempts to correlate it with temperature and rainfall were abortive.

ACKNOWLEDGEMENT

We express our thanks and gratitude to the Head of the Department of Obstetrics and Gynaecology and the Superintendent of Government Maternity Hospital, Tirupati for allowing us to

publish this paper.

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