INTERNATIONAL JOURNAL OF BIOASSAYS
ISSN: 2278-778X
CODEN: IJBNHY
ORIGINAL RESEARCH ARTICLE
OPEN ACCESS

GESTATIONAL TROPHOBLASTIC NEOPLASIA: A PROSPECTIVE STUDY OF PREGNANCY OUTCOME FOLLOWING SUCCESSFUL CHEMOTHERAPY

Guhan Beena*, S Lakshmi and Rajmohan Laxmy
Department of Obstetrics and Gynaecology, Institute of Maternal and Child Health, Government Medical College, Calicut, India

Received for publication: May 06, 2015; **Revised:** May 15, 2015; **Accepted:** June 11, 2015

Abstract: Gestational Trophoblastic Neoplasia (GTN) is the only neoplasia that is really curable and patients can preserve fertility with different medical and surgical treatment modalities. The aim of this study was to explore the conception rates and the outcome of pregnancy after successful chemotherapy for GTN. Between January 1998 to December 2008, 199 patients who went in for GTN were all treated with chemotherapy depending on the risk scoring. Medical records were analyzed retrospectively for the time interval between completion of chemotherapy and pregnancy, conception rate and the pregnancy outcome. 176 (94.1%) had subsequent conceptions, 8 (4.2%) had secondary infertility and 3 (1.6%) adopted contraception for the fear of the side effects of chemotherapy on their babies.12 were lost for follow up. 58 (33%) of the pregnancies happened within one year and 118 (67%) after one year. Majority of the subsequent conceptions resulted in term live birth 147 (83.6%). Of the remaining pregnancies, 5 (2.8%) went in for preterm delivery, 22 (12.5 %) ended up in abortion and 2 (1.1%) unfortunately turned out to be molar pregnancy again. No anomalies were reported from our study group. Outcome was almost similar in those who conceived within one year and beyond. 123 (70%) had a normal vaginal delivery and 53 (30%) needed caesarian section. Majority of the neonates were females 102 (58%) and 118 (67%) had a birthweight of 2.5-3 Kg. Our study indicates that patients who do conceive following chemotherapy for GTN and are desperate to have a child can definitely be assured of a promising reproductive future which is comparable to the general population.

Key word: Gestational Trophoblastic Neoplasia; GTN

INTRODUCTION

Gestational trophoblastic disease is the only neoplasm that is self-curable and patients can preserve fertility with different medical and surgical treatment modalities. With the introduction of effective chemotherapy, patients with gestational trophoblastic neoplasia (GTN) have been successfully treated with chemotherapy while preserving reproductive function (Newlands, 1996; Matsui *et al.,* 1998). This tumor occurs most frequently among women in their twenties and thirties, who often desire future pregnancies after the completion of chemotherapy. However, patients with GTN may express fears related to future pregnancies, especially the possibility of GTN reoccurrence, abnormal pregnancy outcome and fetal anomalies resulting from anti-cancer chemotherapy. Many previous studies (Goldstein *et al.,* 1984; Rustin *et al.,* 1984; Ngan *et al.,* 1988; Berkowitz *et al.,* 1994; Kim *et al.,* 1998; Woolas *et al.,* 1998) have confirmed that patients with persistent GTN may anticipate a normal reproductive outcome following chemotherapy

MATERIALS AND METHODS

The present study was done between January 1998 to December 2008 a total of 691 cases of Gestational trophoblastic disease attended the Trophoblastic clinic of the Institute of Maternal and Child Health, Government Medical College, Calicut. Of these 199 patients went in for GTN during the routine regular follow-up. Depending on the risk scoring and staging they were treated with single agent chemotherapy (Methotrexate, Actinomycin D) and combination chemotherapy (Methotrexate, Actinomycin D, Etoposide, Cisplatinium). Remission was diagnosed when three consecutive weekly HCG levels were within the normal range. An additional cycyle of chemotherapy was given for low risk and three cycles for high risk GTN. After remission HCG levels were determined monthly for 6 months every other month for 6 months, and then every 3 or 4 months for next 12 months. Patients were advised not to conceive within a period of 1 year of completion of chemotherapy.

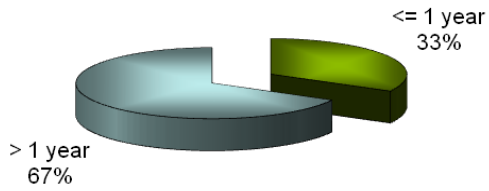
RESULTS

Age wise distribution, majority were in the 20-24 age group, 44.7% and only 7% were above 35 years. Majority were nullipara, 54.3% and 33.2% were primiparas. Majority, 95% underwent single agent chemotherapy and 5% underwent multiple agent chemotherapy. 94% of the patients were regularly followed up. Regarding conception rates 33% conceived within 1 year and 61% after 1 year, 4.3% had secondary infertility, 1.1% were practicing contraception. Of the 94.1% who conceived, 83.5% reached term, 12.5% had abortion, 2.8% had preterm delivery and unfortunately 1.1% had recurrent mole

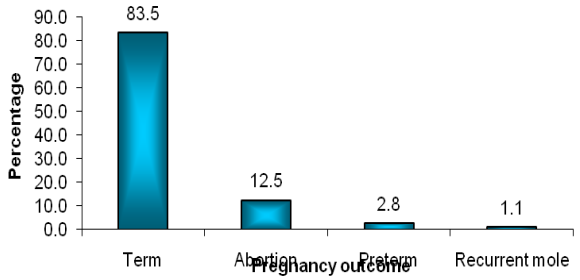
***Corresponding Author:**
Dr. Beena Guhan,
Department of Obstetrics and Gynaecology,
Institute of Maternal and Child Health,
Government Medical College, Calicut, India.

Among the 83.5% who reached term, 70% achieved normal vaginal delivery and 30% had C-section. Among this 30%, 41.3% were for previous C-section, 34.8% were for failed induction, 17.4% for foetal distress and 4.3% for precious pregnancy.

Distribution of patients based on pregnancy interval after chemotherapy



Distribution of patients based on pregnancy outcome



DISCUSSION

Gestational trophoblastic neoplasia occur in the reproductive age and hence most of them are desirous of a future pregnancy following treatment. The discovery of potent chemotherapeutic agents has made possible fertility preservation even in the event of widespread metastasis. Nevertheless, patients fear related to future pregnancies especially regarding the possibility of recurrence or probability of foetal anomalies are very strong, and hence the necessity of studies.

Our studies showed that the rates of term, preterm and abortion are all similar to general population. Data from other centers also show that subsequent pregnancy experience in patients treated with GTN is similar to general population (Mousavi *et al.,* 2005; Kim *et al.,* 1998; Berkowitz *et al.,* 1994)

Anti-malignant drugs preferentially destroy rapidly dividing cells. Ovarian follicles being highly vulnerable, the possibility of a declining ovarian reserve and hence infertility do exist. Actinomycin D, Vincristine, Etoposide are said to have gonadotoxic effects (Rustin *et al.,* 1984). Woolas *et al.,* 1998 did not observe a difference in conception rates or pregnancy outcome in patients treated with single agent or multiple agent chemotherapy. Another study suggests that recessive mutations may not be detected in the first generation (Van Theil *et al.,* 1970). In our study we did not yet come across a case of premature ovarian failure. The secondary infertility rates in our study was 4.3% in another reported study it was 12.7% (Mousavi *et al.,* 2005).

Another usual concern was the recurrence of molar pregnancy. In studies by Berkowitz *et al.,* the rates were 1% and by Mousavi *et al.,* it was 3%. In our study it was 1.1%. In our study we did not come across any remarkable obstetric complication, though some studies report an increased incidence of placenta previa (Ross 1976). The birth weights, neonatal outcome, sex, Apgar were all similar to normal pregnancy outcomes (song *et al.,*)

CONCLUSION

Our study indicates that treatment of GTN with chemotherapy in compatible with preservation of fertility and also holds a promising pregnancy outcome comparable to general population. Also anticancer drugs used to treat GTN may not have a harmful effect on the subsequent pregnancy. However recurrent molar gestation should be reliably excluded each time they conceive

REFERENCES

1. Berkowitz, R.S., Bernstein, M.R., Laborde, O. *Et al.,* (1994) Subsequent pregnancy experience in patients with gestational trophoblastic disease New England Tropoblastic DiseaseCentre, 1965-1992. J. Reprod. Med., 39, 228-232.

2. Goldstein D.P., Berkowitz, R.S and Bernstein, M.R. (1984) Reproductive performance after molar pregnancy and gestational trophoblastic tumours. Clin. obstet. Gynecol., 27, 221-227.

3. Kim, J.H, Park, D.C., Bae, S.N. *et al.,* (1998) Subsequent reproductive experience after treatment for gestational trophoblastic disease. Gynecol. Oncol., 71,108-112.

4. Matsui,H., Iitsuka, Y., Seki, K.*et al.,* (1998)Comparison of chemotherapies with methotrexate, VP-16 actinomycin-D in low-risk gestational trophoblastic disease: remission rates and drug toxicities.Gynecol.Obstet.Invest.,46,5-8.

5. Matsui, H., Suzuka, K., Iitsuka, Y.*et al.,* (2000) Combination chemotherapy with methotrexate, etoposide, and actinomycin D for high-risk gestational trophoblast tumors. Gynecol.Oncol.,78,28-31.

6. Ministry of Health and Welfare (1998) Maternal and Child Health Statistics of Japan. Mothers' and Children's Health and Welfare Association, Tokyo.

7. Rustin, G.J.S., Booth, M., Dent, J. *et al.,* (1984) Pregnancy after cytotoxic chemotherapy for gestational trophoblastic tumours. Br. Med. J., 288,103-106.

8. Song HZ, Wu PC, Wang YE, Yang XY, Dong SY (1988)Pregnancy outcomes after successful chemotherapy for choriocarcinoma and invasive mole: long-term follow-up Am J Obstet Gynecol 158, 538-45.

9. Van Thiel DH, Ross GT, Lipsett MB (1970) Pregnancies after chemotherapy of trophoblastic neoplasms.Science169, 1326-1327.

10. Woolas, R.P., Bower, M., Newlands, E.S. *et al.,* (1998) Influence of chemotherapy for gestational trophoblastic disease on subsequent pregnancy outcome.Br. J. Obstet. Gynaecol., 105, 1032-1035.

CITE THIS ARTICLE AS:
Guhan Beena, S. Lakshmi and Rajmohan Laxmy, Gestational Trophoblastic Neoplasia: A Prospective Study Of Pregnancy Outcome Following Successful Chemotherapy, International Journal of Bioassays, 2015, 4 (07), 4112-4114.

Source of support: Nil
Conflict of interest: None Declared