

Chapter 12

GESTATIONAL TROPHOBLASTIC DISEASE PATHOLOGY

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Gestational trophoblastic disease (GTD) is a group of diseases caused by excessive proliferation of trophoblast cells of the placenta. The origin of maternal lesions in GTD is not maternal but fetal cells. This group includes benign, non-neoplastic lesions such as placental site nodule, exaggerated placental area and hydatidiform mole.

Gestational trophoblastic neoplasia (GTN) pregnancy neoplasms group comprises choriocarcinoma, placental region trophoblastic tumor, epithelioid trophoblastic tumor and invasive mole. At the same time, the diagnosis of GTN can be made by the continuous increase of human chorionic gonadotropin (hCG) after evacuation of molar pregnancy, when histopathological examination cannot be made.

Most of GTD produces the beta subunit of hCG and may have chromosomal abnormalities such as molar pregnancies, and histological diagnosis accuracy can be strengthened by examining DNA content^(1,2).

PATHOGENESIS

It is known that imprinting plays a role in the formation of molar pregnancies and GTD. Paternal genes have more control over placental growth, while maternal genes have more control over fetal growth. Somatic point mutations and instability of mitochondrial DNA were found in samples of hydatidiform moles and choriocarcinoma⁽³⁾. Amplification and overexpression of various oncogene products, such as c-erbB-2, c-myc, c-fms, and mdm-2, have been shown to be associated with a higher proliferation index, aggressive course and malignancy formation in GTD^(4,5). Epidermal growth factor receptor (EGFR) is overexpressed in choriocarcinoma and complete hydatidiform moles and possibly presents a therapeutic target⁽⁶⁾. Downregulation of tumor suppressor genes, including

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The score of the patient is calculated and then identified regimen of chemotherapy (single or combine). When a score is between 0 and 6, it is low risk of resistance to single chemotherapy, However, a score is between 7 and 12, it is a high risk of resistance to monotherapy and it requires combination chemotherapy. Scores above 12 may be related to brain metastases, and failed prior multi-agent chemotherapy and considered as ultra high risk.

Table2. WHO Prognostic Scoring System				
Score	0	1	2	4
Risk factor				
Age	<40	>40		
Previos pregnancy	Mole	Abortion	Term	
Interval from last pregnancy (months)	4	4-6	7-12	>12
Initial serum hCG level (mIU/mL)	<103	103-104	104-105	>105
Largest tumor (including uterine), cm	<3	3-4	≥5	
Location of metastases	Lung	Spleen, kidney	Gastrointestinal system	Brain, liver
Number of metastases	-	1-4	5-8	>8
Prior chemotherapy treatment	-	-	single	more

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