Hydatidiform mole - Studies on genetic constitutions correlated with morphology, clinical features, and persistent trophoblastic disease.

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Summary

Hydatidiform mole (HM) is a rare type of pregnancy that occurs approximately in 1:1000 pregnant women. Apart from an extremely low chance of a normal outcome, these women also encounter a risk of persistent trophoblastic disease (PTD) and may need chemotherapy to achieve remission. As of today, all women are monitored with hCG levels to identify those with PTD after initial surgery for HM. Within the monitoring period, the patients are requested not to become pregnant.

HM can be classified both by histopathologic criteria (complete/partial) and by genetic constitution (diploid/triploid). It is widely accepted that patients with complete mole have a higher risk of PTD than do patients with partial mole, but the risk of PTD after a partial mole cannot be ignored. Most complete moles have a diploid genome, whereas most partial moles are triploid.

We, like others, conclude that genetic heterogeneity is seen between HMs of both histopathologic classes. We also observed that some of the triploid gestations with vesicles were not classified as molar gestations by the histopathologic classification.

Diploid and triploid mole differ in clinical presentation. Although the patients encounter the same symptoms (vaginal bleeding, excessive uterine size, nausea, and possibly preeclampsia), the symptoms are more severe, present at earlier gestational ages, and frequently more than one symptom is present in patients with diploid mole. The levels of hCG are significantly higher in patients with diploid mole. Triploid molar pregnancy often resembles a non-molar miscarriage.

In predicting which patients have a risk of PTD, "diploid mole" is a more sensitive predictor than "complete mole". Patients with triploid mole have a risk of PTD that approaches zero. Ploidy could thus be used as a predictor for both spontaneous remission and risk of PTD. Patients with triploid mole and thus a risk of PTD that does not exceed the risk after any pregnancy could benefit from a shorter surveillance period and thus a shorter postponement of desired childbearing and, more important, less anxiety.

A few women have a twin pregnancy comprising a hydatidiform mole and a normal co-twin. These pregnancies are a clinical challenge because the maternal complications may render termination of the pregnancy, and because the risk of PTD has been thought to be very high.

In this study, the risk of PTD after a twin pregnancy with diploid mole and normal co-fetus did not significantly exceed the risk after a singleton diploid mole. Pursuing the optimal clinical care, elective termination in these pregnancies, because of the risk of PTD, may not be necessary.

We find that ploidy is a valid predictor of spontaneous remission or risk of PTD after a molar pregnancy. Our observations furthermore imply that diploid and triploid moles represent two different biologic entities with different clinical properties.