Postmolar gestational trophoblastic neoplasia: beyond the traditional risk factors

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Objective: To investigate the slope of linear regression of postevacuation serum hCG as an independent risk factor for postmolar gestational trophoblastic neoplasia (GTN).
Design: Multicenter retrospective cohort study.
Setting: Academic referral health care centers.
Patient(s): All subjects with confirmed hydatidiform mole and at least four measurements of β-hCG titer.
Intervention(s): None.
Main Outcome Measure(s): Type and magnitude of the relationship between the slope of linear regression of β-hCG as a new risk factor and GTN using Bayesian logistic regression with penalized log-likelihood estimation.
Result(s): Among the high-risk and low-risk molar pregnancy cases, 11 (18.6%) and 19 cases (13.3%) had GTN, respectively. No significant relationship was found between the components of a high-risk pregnancy and GTN. The β-hCG return slope was higher in the spontaneous cure group. However, the initial level of this hormone in the first measurement was higher in the GTN group compared with in the spontaneous recovery group. The average time for diagnosing GTN in the high-risk molar pregnancy group was 2 weeks less than that of the low-risk molar pregnancy group. In addition to slope of linear regression of β-hCG (odds ratio [OR], 12.74, confidence interval [CI], 5.42–29.2), abortion history (OR, 2.53; 95% CI, 1.27–5.04) and large uterine height for gestational age (OR, 1.26; CI, 1.04–1.54) had the maximum effects on GTN outcome, respectively.
Conclusion(s): The slope of linear regression of β-hCG was introduced as an independent risk factor, which could be used for clinical decision making based on records of β-hCG titer and subsequent prevention program. (Fertil Steril® 2015;104:649–54. ©2015 by American Society for Reproductive Medicine.)
Key Words: GTN, human chorionic gonadotropin, independent risk factor, penalized logistic regression

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Gestational trophoblastic disease (GTD), a group of disorders identified by abnormal proliferation of trophoblastic tissue, is one of the prognoses of spontaneous recovery, local invasion, and metastasis. The general term of gestational trophoblastic neoplasia (GTN) is used to describe a wide range of malignant trophoblastic diseases including invasive mole, choriocarcinoma, epithelioid trophoblastic tumor, and placental site trophoblastic tumor (1, 2). Although GTN is generally seen in molar pregnancies, it can be seen in any pregnancy.

Although hydatidiform mole is generally diagnosed in the first trimester of pregnancy during routine pregnancy tests, its clinical signs and symptoms are rarely seen at this time (3). According to current available definitions, this neoplasia is confirmed by the following criteria: [1] no decrease in hCG levels over four consecutive measurements, [2] an increase in hCG serum titer measured over 3 consecutive weeks, [3] detectable hCG serum

Received December 20, 2014; revised May 6, 2015; accepted June 2, 2015; published online June 19, 2015.
M.B. has nothing to disclose. M.M. has nothing to disclose. P.K. has nothing to disclose. A.A. has nothing to disclose. M.A.M. has nothing to disclose. S.A.-v. has nothing to disclose. F.S.S. has nothing to disclose.
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Fertility and Sterility® Vol. 104, No. 3, September 2015 0015-0282/$36.00

http://dx.doi.org/10.1016/j.fertnstert.2015.06.001