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.

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 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, 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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