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Do we need post-pregnancy screening with human chorionic gonadotrophin after previous hydatidiform mole to identify patients with recurrent gestational trophoblastic disease?

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ABSTRACT

Objective: To determine whether post-pregnancy human chorionic gonadotrophin screening after previous hydatidiform mole identifies patients with recurrent gestational trophoblastic disease.
Study design: A retrospective evaluation of 9315 patients who underwent post-pregnancy screening from 2000 to 2009, as part of the National Gestational Trophoblastic Disease Service in the UK.
Results: Patients with previous hydatidiform mole, who had human chorionic gonadotrophin screening after one or more subsequent pregnancies, were identified (n = 9315). Of these, 8630 patients had an initial hydatidiform mole that did not require chemotherapy. In 12,329 subsequent pregnancy events, screening with human chorionic gonadotrophin identified 3 cases of gestational trophoblastic neoplasm. The remaining 685 patients developed gestational trophoblastic neoplasm, following their initial hydatidiform mole and required chemotherapy. In this group there were 1012 further pregnancy events, human chorionic gonadotrophin screening identified 3 patients with gestational trophoblastic neoplasm. The overall recurrence rate was 6 in 13,341 events (risk 1: 2227). The rate was 3 in 12,329 (risk 1:4110) for HM that did not require chemotherapy and 3 in 1012 (1:337) for previously treated gestational trophoblastic neoplasm. All 6 patients with recurrent disease were successfully treated with chemotherapy.
Conclusion: Routine post-pregnancy human chorionic gonadotrophin screening may be safely discontinued in patients with one previous uncomplicated hydatidiform mole.

Introduction

GTD is a rare pregnancy related disorder, and is an umbrella term for a range of conditions. These include the premalignant complete or partial hydatidiform mole through to the malignant end of the spectrum, known as GTN; which encompasses invasive mole, choriocarcinoma, and the very rare placental-site and epithelioid trophoblastic tumours. In the UK, all patients with GTD are registered for human chorionic gonadotropin (hCG) monitoring at one of three designated screening centres and, if required, are treated at one of two trophoblastic disease centres—either Charing Cross Hospital (CXH), London, or Weston Park Hospital (WPH), Sheffield. The need for chemotherapy is defined by malignant change, mostly identified by a rise or plateau in the serum concentration of hCG, which occurs in approximately 15% of complete and 0·5–1% of partial moles. The cure rate for treated patients approaches 100% [1].

Women with a molar pregnancy have an increased risk of further mole but it is also thought that subsequent pregnancy can trigger growth of dormant GTN left by a prior mole [2]. Therefore, based on UK expert opinion (Grade 4 recommendation) hCG is measured after the end of any subsequent pregnancy to detect such recurrence [3]. However, only occasional patients could be recalled from memory, as being diagnosed with recurrent GTN based on these samples.

We therefore undertook a detailed study to ascertain how many women have been screened post-pregnancy, and how many have been identified as having recurrent GTN as a result of screening. This was a retrospective evaluation of one aspect of an NHS

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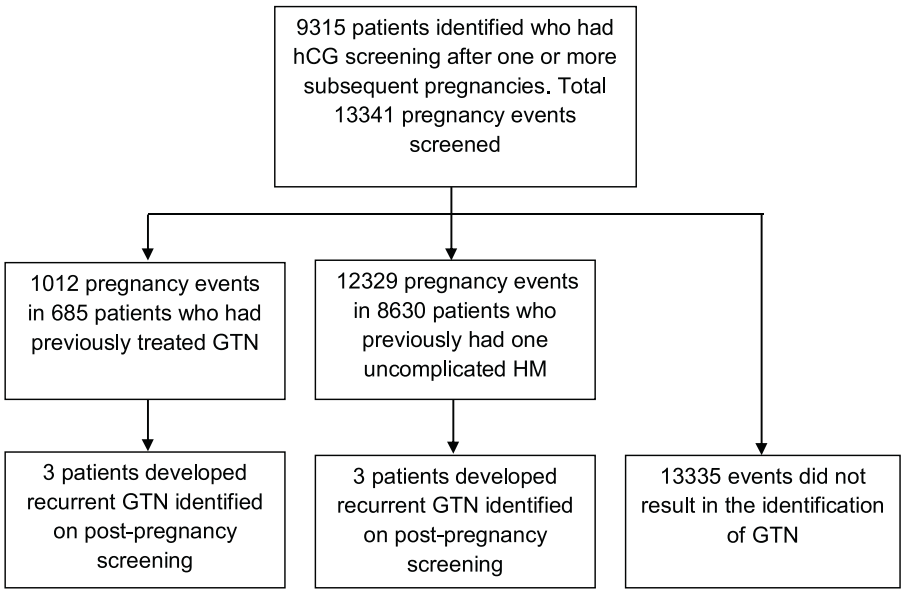

Fig. 1. Post pregnancy screening of patients with one previous hydatidiform mole from Charing Cross Hospital, London and Weston Park Hospital, Sheffield, 2000–2009.

commissioned Royal College of Obstetrics and Gynaecologists (RCOG) guided specialised service.

Materials and methods

Databases are kept of all patients registered with the national GTD service, at CXH and WPH. During the period 2000–2009, 9958 (CXH) and 4803 (WPH), total 14,761 patients were registered with the GTD centres. Of these 131 patients had a second HM and 13 presented after two or more previous HM, all of which were picked up on clinical features or pathology before post-pregnancy hCG monitoring was instituted.

This study dealt only with recurrent GTD picked up by routine hCG screening of any non-molar pregnancy subsequent to one previous HM. hCG was measured 6–10 weeks after the end of each subsequent pregnancy. Post-pregnancy hCG samples (for the period 2000–2009) were identified on both databases. Relevant clinical data were obtained in patients with confirmed raised post-pregnancy hCG.

Results

Patients with previous HM who had hCG screening after one or more subsequent pregnancies were identified (n = 9315). A total of 13,341 pregnancy events were screened and 13,335 did not detect GTN (Fig. 1). Of the 9315 patients, 8630 had an initial HM that did not require chemotherapy and with 12,329 subsequent pregnancy events, hCG screening identified 3 cases of GTN. The remaining 685 patients developed GTN following their initial mole and required chemotherapy. There were a further 1012 pregnancy events in this group, where hCG screening identified another 3 GTN cases.

The overall recurrence rate was 6 in 13,341 events (risk 1: 2227). The rate was 3 in 12,329 (risk 1:4110) for patients with previous HM that did not require chemotherapy and 3 in 1012 (1:337) for patients with previously treated GTN. All 6 patients with recurrent GTN were successfully treated with chemotherapy.

Comment

Based on their early (10 year) experience of over 5000 patients with GTD the CXH group recommended that patients were screened by hCG estimations following any subsequent pregnancy, since such pregnancies were followed by trophoblastic tumours in four of their patients [4]. This recommendation was incorporated in guidance issued by the RCOG [5].

The origin of the GTD found so early after subsequent pregnancy is uncertain, because such patients are treated on the basis of hCG and clinical findings - histological material is rarely available. Most likely, however, this represents a resurgence of the previous GTD rather than a new episode of GTD [6].

Routine post-pregnancy screening is time consuming, expensive and may cause psychological and practical concerns for patients. Also, although hCG is nearly always normal within 4 weeks of normal pregnancy it is occasionally raised for up to 60 days following termination of early pregnancy [7] so the screening result may be unrelated to further GTD, which leads to more, and unnecessary, tests being done.

Our initial impression that the pick-up rate for screening was small is confirmed in this detailed study. The overall detection rate (six patients detected from 13,421 pregnancy events) was 1 in 2227. For previous single HM not requiring chemotherapy this was extremely low at 1 in 4110. For previously treated GTN it was higher at 1 in 337.

With the low probability of detecting recurrent disease in those patients with one previous HM not requiring chemotherapy we have ceased routine screening in this group and this will be reflected in the forthcoming revised RCOG guideline.

With patients who have required chemotherapy for post-molar GTN it would seem sensible to continue hCG screening after subsequent pregnancies, bearing in mind that these patients are already on long-term surveillance following their treatment.

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