

## **Management and outcome of healthy women with a persistently elevated $\beta$ -hCG**

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**Background:** Elevated serum beta human chorionic gonadotrophin ( $\beta$ -hCG) not due to pregnancy can occur as a consequence of (1) gestational trophoblastic neoplasia (GTN) (2) non-gestational trophoblastic tumours, (3) false positive  $\beta$ -hCG, (4) during the menopause, and (5) it may represent a high normal level. The accurate differentiation between these causes is vital to avoid potentially inappropriate investigations and therapies which may induce infertility or other serious adverse events. Here we report the United Kingdom experience of patients with an elevated  $\beta$ -hCG where the cause was initially uncertain and provide a clinical algorithm for the management of such cases.

**Method:** The Charing Cross and Sheffield GTD database was screened between 1981-2004 to identify patients referred with an elevated  $\beta$ -hCG in the absence of a previous diagnosis of GTD and who were not pregnant.

**Results:** Between 1981-2004 fourteen women were referred with persistently raised serum  $\beta$ -hCG which presented diagnostic problems. False positive  $\beta$ -hCG was excluded in all 14 cases (13 had positive urine  $\beta$ -hCG and all had samples that serially diluted consistent with genuine hormone). Three subsequently developed gestational trophoblastic tumours after 6-17 months. These were detected by rising  $\beta$ -hCG levels, positive imaging and in 2 cases by a change in hyperglycosylated  $\beta$ -hCG. All 3 were cured with chemotherapy. In the other 11 cases no cause for the persistently elevated  $\beta$ -hCG has been found (follow-up 7-201 months), in 7 of these cases there was surgical intervention and/or chemotherapy administered without benefit. Cases will be used to highlight the problems faced and a protocol proposed for the management of healthy women with persistently elevated  $\beta$ -hCG based on our clinical experience.

**Conclusion:** The finding of an elevated serum and urinary  $\beta$ -hCG in healthy women should be investigated in a systematic manner to exclude an underlying malignant process and also to avoid inappropriate surgical and medical intervention. Close follow up is required of these cases as a tumour may not become apparent until many months or years after the initial referral and investigations have been carried out.

