Hyperglycosylated HCG (Invasive Trophoblast Antigen) in the Differential Diagnosis of Malignant or Invasive Trophoblastic Disease

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Technology description

Determines whether gestational trophoblastic disease is invasive or quiescent (non-invasive) from a urine, saliva, serum, or plasma sample.

Background

Gestational trophoblast disease occurs in 1 out of every 800 pregnancies and is characterized by abnormal cellular growth of the tissues. This can be formed as a result of conception, leading to the development of tumors within the uterus. The disease is typically diagnosed by ultrasound or a Computerized Axial Tomography (CT) or Magnetic Resonance Imaging (MRI) imaging methods; however the key test is the human chronic gonadotropin (hCG) blood test as it can often indicate a direct measure of the amount of tumor tissue present.
Once trophoblast disease is diagnosed, any treatment that is recommended will depend upon the severity of the disease. If it is invasive, a more rigorous treatment regimen is required compared to a non-invasive diagnosis. In fact, when gestational trophoblastic disease is non-invasive or slow growing, none of the 'invasive' treatments are effective. There is currently no accurate method for distinguishing between invasive and non-invasive gestational trophoblastic disease.

Technology Description

A researcher at the University of New Mexico has patented an invention that determines whether gestational trophoblastic disease is invasive or quiescent (non-invasive) from a urine, saliva, serum, or plasma sample. The novel diagnostic uses an immunoassay to determine the percentage of the amount of hCG in a sample that is ITA- an isoform of hCG. If the percentage of the isoform in a sample is more than 30%, diagnosis of invasive gestational trophoblastic disease or the existence of a germ cell tumor may be made. An amount of less than 30% indicates a diagnosis of quiescent gestational trophoblastic disease.

Application area

Distinguishes between invasive and non-invasive gestational trophoblastic disease
Diagnostic can used on many biological samples: urine, saliva, serum, or plasma
Spares patients from undergoing unnecessary treatments used to treat invasive gestational trophoblastic disease
Can detect the presence or absence of germ cell tumors

Institution

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