ROLE OF TUMOR MARKERS IN GYNECOLOGIC MALIGNANCY IN PREGNANT WOMEN

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OVARIAN TUMOR MARKER

- Although serum tumor markers are routinely drawn preoperatively when planning a laparotomy for management of a pelvic mass in nonpregnant patients, we do not suggest this approach during pregnancy

SERUM CA 125

- CA 125 may be elevated during early gestation and immediately following delivery
- CA 125 may be helpful as a tumor marker of EOC between 15 weeks of gestation and delivery
- A CA 125 in the range of 1000 to 10,000 is likely related to cancer
- values in the range of 75 to 150 could be either pregnancy-related or due to an ovarian cancer that does not demonstrate high expression of CA 125.

ALPHA-FETOPROTEIN

- Maternal serum levels of AFP (MSAFP) normally rise during pregnancy;
- serum levels are routinely assayed as part of the screen for fetal neural tube defects and Down syndrome.
- MSAFP levels are typically <500 ng/mL in pregnancies complicated by neural tube defects

ALPHAFETOPROTEIN(CONTINIUE)

- High MSAFP levels are seen in some types of ovarian germ cell tumors (eg, endodermal sinus tumor, embryonal carcinoma, and mixed tumors). These levels are often >1000 ng/mL, especially with pure endodermal sinus (yolk sac) tumors, which can be associated with levels >10,000 ng/Ml.

ALPHAFETOPROTEIN(CONTINIUE)

- MSAFP levels that are above 2.0 to 2.5 MoMs are considered abnormal.
- The AFP levels associated with ovarian cancer typically translate into much higher MoM values than seen with neural tube defects.

ALPHAFETOPROTEIN(CONTINIUE)

- Some authors suggest that a MSAFP level above 9 MoM should prompt concern for **germ cell tumors** of either gonadal or nongonadal origin in the absence of **fetal abdominal wall defects** or **anencephaly**

LACTATE DEHYDROGENASE

- LDH is not elevated in normal pregnancy, although elevations can occur in some pregnancy-related disorders such as preeclampsia and HELLP syndrome.
- LDH is elevated in the serum of patients with ovarian dysgerminomas and is a reliable marker for diagnosis and follow-up of these tumors in pregnant patients.

INHIBIN A

- serum inhibin A is a useful tumor marker for following the course of treatment for ovarian granulosa cell tumors in nonpregnant patients
- inhibin A is made in the developing placenta, and serum levels are elevated in early gestation.
- inhibin A levels may be measured as a component of screening for Down syndrome.

HUMAN CHORIONIC GONADOTROPIN

- The beta subunit of hCG is a useful marker for some germ cell neoplasms (particularly choriocarcinoma
- However, it cannot be used as a tumor marker during pregnancy

HUMAN EPIDIDYMIS PROTEIN 4 (HE4)

- Assessment of the HE4 level is approved for monitoring patients with ovarian cancer for disease recurrence or progression, but not for screening.
- The authors concluded that HE4 serum biomarkers are unaffected by pregnancy, and therefore may be helpful in the evaluation of pelvic masses in pregnancy.

CA15-3

- CA 15-3 is used as TM for breast carcinoma
- It has been traditionally considered useful to monitor the response to treatment in metastatic disease, to detect cancer recurrence

CA15-3(CONTINIUE)

- CA 15-3 may increase in many non-malignant conditions including liver cirrhosis, tuberculosis, benign breast disease, pelvic inflammatory disease, endometriosis and autoimmune diseases as systemic lupus erythematosus.

CA15-3(CONTINIUE)

- Nowadays, the oncofoetal origin of CA 15-3 is still debated.
- Most of the studies reported very low CA 15-3 levels in amniotic fluid throughout pregnancy compared to its higher values in maternal serum.

- Ecancermedicalscience/2019/Can we trust tumour markers in pregnancy after breast cancer? A case of elevated CA 15-3 in the third trimester of pregnancy normalising after delivery/Barbara Buonomo, Stefania A Noli, [...], and Fedro A Peccator

SCC-ANTIGEN

- Elevated SCC serum levels are found in between 57% and 70% of women with a primary squamous cell carcinoma of the cervix
- Authers conclude that SCC is an oncofetal antigen.
- it is more likely that the fetus, and not the placenta, is the origin of SCC found in amniotic fluid, but this remains to be confirmed

TUMOR MARKERS

- Based on this review, we can conclude that CA 125 values can be raised during pregnancy and both CA 15.3 and SCC levels generally remain below the cut-off values, although higher levels are not uncommon.
- Inhibin B, AMH and LDH levels are not elevated in maternal serum during normal pregnancy

- BMC medicine/2012/Physiologic variations of serum tumor markers in gynecological malignancies during pregnancy: a systematic review/Sileny N Han, Anouk Lotgerink, [...], and Frédéric Amant

Thank you
for your attention