

The “Kick off” for Functional Medicine in Egypt. Modulation of Estrogen Metabolic Pathways to Prevent Female Tumors

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Introduction:

Environmental factors (mainly xenobiotic) have been identified as "endocrine disruptors" that can mimic estrogen molecules, thus facilitating the growth and development of estrogen-dependent female tumors such as breast, ovarian and endometrial tumors. It is crucial to identify estrogen metabolic pathways and detoxification genes to overcome the dominance of toxic estrogen metabolites via modulating those pathways.

Methods:

25 patients were studied; 15 out of them were diagnosed with malignant tumors and 9 patients with benign tumors. They were tested for their genetic pathways of estrogen detoxification phase 1 cytochrome P450 genes: CYP1A1, CYP1B1, CYP2C9 & CYP3A4. Phase 2 genes: GSTM1, GSTP1, NAT, COMT and SOD2.

A buccal swab was sent to a functional laboratory in the United States for testing and interpretation. The malignant tumors included 15 breast cancers and 1 ovarian cancer. Benign tumors included 5 cases of breast fibroadenomas, 3 cases of endometriosis and 1 case of uterine fibroids. The cases were chosen because of their pathology and scans. Gene panels were identified for each patient, and based on each genetic panel, certain foods and food-derived components were given for a period of 4-6 months with follow up of symptoms and scans.

Results:

The most prevalent mutations were 100% for GSTM1, 82% for SOD2, 76% for CYP1B1, COMT and NAT2-slow metabolizers, 68% for NAT-2 rapid metabolizers, 60% for GSTP1 and 32% for CYP1A1.

Proper modulation of these mutations using foods and food-derived components resulted in improvements in pain scores and decreases in size of endometriosis, fibroadenomas and fibroids. Regular Menstruation stabilized and cycle length decreased in the fibroid patient, and absent of disease recurrence for adjuvant cancer patients.

Conclusion:

Identifying mutations in estrogen metabolic pathways is a very important tool in preventing tumor recurrence. It also improves pain scores and decrease in size of benign tumors. It can be a great tool for prevention of female tumors development.