

FUNCTIONAL MEDICINE UPDATE

October 2010

ISSN 1092-1761

Vol. 30, No. 10

Cancer as a Chronic Disease: New Therapeutic Tools and Increasing Survival Rates are Leading to a Change in Perception

Cancer as a Chronic Disease was the title of the 17th International Symposium on Functional Medicine held in May 2010. As Dr. Bland prepares to interview one of the top-rated speakers from that event, Dr. Jeanne Wallace, he discusses how the reputation of cancer—that it is a lethal disease—has been changing as new therapies have led to greater survival rates. He begins by discussing the origins of cancer.

Dr. Eleanor Rogan, of the University of Nebraska, has twice been interviewed for *Functional Medicine Update*. She is also a Linus Pauling Functional Medicine Award recipient. Her work has been at the forefront of understanding how an endogenous hormone, estrogen, can undergo specific types of metabolic transformations to initiate a cancer. Accumulating evidence suggests that specific metabolites of estrogens, namely catechol estrogen quinones, react with DNA to form adducts and generate apurinic sites, which can lead to the mutations that induce breast cancer. Dr. Rogan's experiments have demonstrated that CYP1A1, CYP1B1, and CYP3A4 are able to oxidize catechol estrogens to their respective quinones, which can further react with GSH, protein, and DNA, the last resulting in depurinating adducts that can lead to mutagenesis. REF #1

What role can detoxification play in preventing events leading to cancer-initiating transformations? Continuing on the subject of estrogen-sensitive cancers, Dr. Bland discusses studies related to diindolylmethane (DIM), a biologically active congener of indole-3-carbinol (I3C) derived from cruciferous vegetables. As cruciferous vegetables are a rich source of glucosinolates and their hydrolysis products, some epidemiological studies have suggested high intake could be associated with lowered cancer risk. In one placebo-controlled study of indole-3-carbinol in the treatment of CIN, there was a statistically significant regression of CIN in patients treated with I-3-C orally compared with placebo. Dr. Bland also discusses the metabolism of B-ring unsaturated estrogens in humans. REF #2-5

Insulin and Cancer

Dr. Bland credits Dr. Barry Boyd, an oncologist and previous *Functional Medicine Update* Clinician-of-the-Month (January 2004), with increasing his awareness of insulin and cancer as a very active area of research. Dr. Boyd's research indicates that the insulin/insulin-like growth factor (IGF) system may be an important factor in enhancing tumor cell proliferation through the tyrosine kinase growth factor cascade. Additionally, the metabolic syndrome is associated with a chronic inflammatory state and accompanying cytokine abnormalities may also lead to tumor progression. Dr. Bland discusses his view that insulin is a powerful modulator of intercellular signaling

processes that are associated with a whole array of cellular phenotypes and outcomes, not just glucose transport alone. REF #6

Do Specific Forms of Insulin Therapy Correlate to a Higher Statistical Prevalence of Cancer? A New Debate

In 2010, a number of articles have appeared in the scientific literature that focus on the issue of insulin therapy and its relationship to cancer. One article published in the *Journal of the American Medical Association* asks the question right in its title, “Does Insulin Therapy Promote, Reduce, or Have Neutral Effects on Cancers?” Dr. Bland discusses his thoughts on this subject. REF #7-9

Insulin Biomarkers: Looking for Smoke Rather Than Fire

Because it would not be possible for a clinician to analyze all of the insulin signaling pathways in a cell, Dr. Bland states that functional medicine practitioners must look at things related to overall insulin signaling processes. He specifically talks about hemoglobin A1c measurement, C-reactive protein, and genomic instability. Dr. Bland points out that surrogate biomarkers are used to track the success of therapy over time and to try to define the environment—what he calls the “molecular milieu” of the cell—that would reflect proper cellular signaling and gene expression patterns. REF #10

Clinician/Researcher of the Month

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Dr. Jeanne Wallace is an authority in integrative cancer care, educating cancer patients and their healthcare providers about evidence-based dietary, nutritional, and botanical support to complement conventional oncology care. She pioneered a multi-modal approach targeting multiple aspects of cancer physiopathology. Specializing in primary malignant brain tumors since 1997, Dr. Wallace also has extensive experience working with clients with breast, ovarian, colorectal, pancreatic, and squamous cell head-and-neck cancers, as well as malignant melanoma. In 2001, she submitted a “Best Case Series” of 101 Glioblastoma multiforme (stage IV brain tumor) patients to the National Cancer Institute’s National Center for Complementary and Alternative Medicine (NCI/NCCAM). This data was updated in April 2004 to include 325 cases, and was favorably reviewed. She is a member of the Society of Integrative Oncology and the National Association of Nutrition Professionals.

Dr. Wallace was a top-rated speaker at the 17th International Symposium on Functional Medicine in 2010. She and Dr. Bland discuss her approach to working with clients, and also a concept she calls the “onco-metabolic milieu,” which she describes as a focus on the terrain of the environment within the body that is fostering the progression of cancer.

Dr. Wallace states she seeks to empower her clients with an understanding that there is much they can do to address the cancer in addition to the conventional medical treatments they receive. Clients are referred to Dr. Wallace from cancer treatment centers all over the United States.

Dr. Wallace provides very specific information about the testing panels she uses in her practice and the research that underpins her choices. She makes dietary recommendations that are tailored for each client. She also creates a comprehensive written report for each client based on the strategies she is recommending, which is a useful tool both for patients and their oncologists. As cancer treatment moves toward a more individualized approach, Dr. Wallace expresses optimism and excitement about an integration of conventional treatment with nutritional and holistic approaches. REF #11-18

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