Understanding Cancer Risk—Genes Matter!

Genetic risk driving the development of cancer is real and it's formidable. I am dating myself, but I can still remember working with my old friend and colleague, Henry Lynch, in Omaha. Over coffee, he began telling me about families that he found who had more than their share of cancer, especially colon cancer. I was a bit skeptical at first, but after looking at the pedigrees, I had to agree that something was amiss. Later, Albert de la Chappelle would add the final piece of the puzzle by identifying the culprit set of mismatch repair genes responsible for hereditary colorectal cancer and associated cancers, commonly referred to as "Lynch syndrome."

Of course, over time, we identified many other syndromes, such as breast and ovarian cancer syndrome, Li-Fraumeni syndrome, and familial atypical mole and melanoma syndrome, among others. We know many of the offending genes, and in the early days, we assessed the need for testing based on family history. Tests were performed on one gene at a time because they were so expensive. This approach, although it seemed logical at the time, was actually quite biased. We clearly underestimated the number of folks with cancer who harbored these cancer-causing genes.

As families became smaller and were often interrupted by divorce or geography, family history became clearly insufficient to guide us. Furthermore, as gene testing became less and less expensive, and high-throughput gene panels became more available, we learned that upwards of 10% of patients have germline mutations and perhaps one-third would not have been predicted by a personal or family history of cancer.

This is not just an academic exercise. Knowing this aspect of your own cancer risk can save your life. Yesterday, I read a powerful piece about a young man who died from metastatic colon cancer at the age of 28 years. He had Lynch syndrome, and no one expected this in his family until his diagnosis. Had this been understood, perhaps he and his family would have taken precautions, such as enrolling in an early cancer screening program. We can only wonder.

This kind of testing used to come with significant downsides, such as high out-of-pocket costs, denial of insurance, social stigma, and so on. Happily, cost is decreasing and thanks to the Affordable Care Act, insurance cannot be denied to patients with preexisting conditions. So what is stopping us?

Personally, I think it is time to consider universal testing as a part of health care maintenance, and that this should be completely covered by any comprehensive health insurance plan. In addition to knowing that you have a cancer-predisposing gene and undergoing appropriate screening, maybe you would also be motivated to adopt a healthier lifestyle through appropriate diet and exercise and avoidance of tobacco and excess alcohol.

Clearly, some health care professionals are not up to speed here. We know that many patients are not offered testing, despite various NCCN Guidelines advising it for patients with different cancer diagnoses. And if the patients' mutation status is unknown, chances are that family members will not be tested either.

We have a lot of problems in health care right now, but this one seems easy to solve. Get the word out to the public. Encourage people to ask for testing. Accelerate education about genetic risk for primary care providers. Ramp up our support for cancer genetic counselling. Just get it done!

WHAT DO YOU THINK? To submit a Letter to the Editor, email JNCCN@nccn.org or log into www.editorialmanager.com/JNCCN.

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