Ironing Out a New Cancer Treatment

It is an unfortunate fact of life that cancer is a pervasive idea within the world. Most everyone can truthfully state that cancer has affected their life in a negative manner, either through first-hand experience or the experience of a loved one. With a massive number of affected peoples, the race to cure cancer is perhaps the most important race of our lifetime. Except, instead of runners, the participants of this race are researchers and other medical professionals.

I had the pleasure of speaking one such “race participant”, Dr. Mckale Montgomery. While she happens to be a marathon runner in her spare time, Dr. Montgomery is currently working with a small team at Oklahoma State University to conduct cancer research. I find it noteworthy that Dr. Montgomery has no background in microbiology or biochemistry, as may seem typical for what the average person thinks of as a cancer researcher; but rather, she has a background in nutritional sciences. So, how does one make the jump from nutrition to cancer research?

Well, in order to explain this, it is first important to give a brief explanation on cancer genetics. The protein p53 typically helps regulate cell division, thereby preventing cancer; however, in cancer patients the protein is mutated in a way that renders it nonworking (National Center for Biotechnology Information, 1998-). That being stated, more often than not a mutation can have multiple effects, or one protein can have multiple mutations. A discovery made by the National Health Institute shows that over half of all tumorous cells have a mutation on the P53 protein that causes the cell to be unable to detect when the cell has absorbed too much iron. This very discovery is what eventually led Dr. Montgomery into the field of cancer research.

As a nutritionist who dealt with iron and its metabolism in the past, Dr. Montgomery took the discovery of this mutation and created the basis of her own research on it. Dr. Montgomery and her team are currently looking into the effects that this specific p53 mutation could have on potential treatments. While all of the research that Dr. Montgomery and I discussed was absolutely fascinating, one particular facet stuck out to me. Dr. Montgomery is looking into the feasibility of creating an iron-based chemotherapy that exploits the p53 mutation. Dr. Montgomery proposes that this type of chemotherapy, paired with other treatment options, could be a safer alternative to traditional chemotherapy. Whereas traditional chemotherapy is often considered so dangerous because it kills off healthy cells and cancerous cells alike, this proposed iron-based chemotherapy may allow for a more targeted approach, thereby reducing the number of healthy cells killed off during the patient’s treatment.

While Dr. Montgomery and her team are still researching the viability if this form of chemotherapy, the very idea is a promising one that fills me with hope for the future of cancer treatment technology.

References:

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