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Your Genes, Your Melanoma

Learn about the role of precision oncology in advanced melanoma treatment.

By Jeff Legos | Jun 03, 2016

In the 1970s, overall survival rates for advanced melanoma patients were approximately six to eight months – a span of time that remained largely unchanged until 2011. However, these patients are now living three times longer. This is largely due in part to advances made in scientific research that have significantly improved our understanding of this disease.

Advanced melanoma is the most serious form of skin cancer and develops when the DNA in skin cells becomes damaged and causes these cells to abnormally multiply and form tumors. We now know that melanoma is not a single disease, but one that can vary from person to person due to genetic changes (often called mutations) that can exist in a melanoma tumor. In fact, melanoma is one of the cancers with the highest frequency of mutations.

Researchers have identified several mutations that can be present in an advanced melanoma tumor. They commonly occur within the mitogen-activated protein kinase (MAPK) pathway – one of the pathways that controls cell growth. When something goes wrong at any step along the pathway, a mutation occurs and cancer cells such as melanoma can grow.

The BRAF mutation – found in about half of all advanced melanoma cases – is the most common. Other common melanoma mutations include NRAS and c-KIT. Additionally, there are tumors referred to as “wild type” that do not test positive for a known mutation. Because of these variations, no two advanced melanoma tumors are the same.

Precision oncology addresses genetic differences. Treatment plans can be tailored to the characteristics of each person’s cancer and are not one-size-fits-all.

For many, it can be difficult to stay up-to-date with all the recent advances. Two treatment options include targeted therapy and immunotherapy:

Treatment guidelines recommend genetic testing for all people with advanced melanoma because the type of mutation may play a key role in the development of a personalized treatment plan. Additional factors influencing treatment decisions are disease stage as well as a person’s age and general health.

Learn how precision oncology can be used to treat advanced #melanoma

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