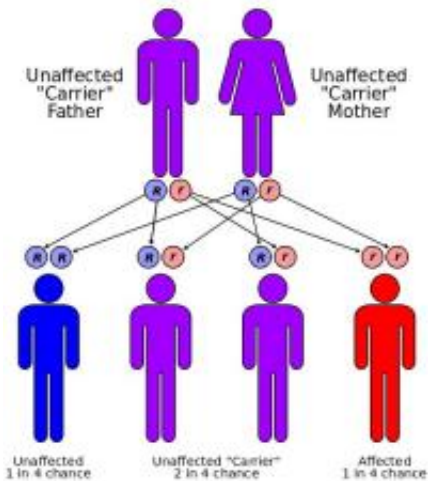


Rare genetic disease offers insight into common cancers

September 4 2012



Fanconi anemia is a recessive genetic condition in which patients' cells are unable to repair DNA damage.

Fanconi anemia is a recessive genetic disorder affecting 1 in 350,000 babies, which leaves cells unable to repair damaged DNA. This lack of repair puts Fanconi anemia patients at high risk for developing a variety of cancers, especially leukemias and head and neck cancer. Cruelly, the condition also nixes the use of an entire class of cancer drugs, namely drugs like mitomycin C that act by encouraging DNA to crosslink together like sticky strands of bread dough – generally, healthy cells can repair a few crosslinks whereas cancer cells cannot and so are killed. However, Fanconi anemia patients are unable to repair the damage done

to healthy or cancerous cells done by these drugs and so treatment with mitomycin C is frequently fatal.

A University of Colorado Cancer Center study funded by the Fanconi Anemia Research Fund explored the effectiveness of a novel agent in preventing cancer in this population – namely, resveratrol as found in red wine. The results of this study will be presented at the 24th annual Fanconi Anemia Research Fund Scientific Symposium, September 27-30 at the Grand Hyatt Hotel in Denver, CO.

In fact, the findings may go far past Fanconi anemia.

"One of the Fanconi genes that is lost is BRCA2 – the same genetic loss that causes many breast cancers," says Robert Sclafani, PhD, investigator at the University of Colorado Cancer Center and professor of biochemistry and [molecular genetics](#) at the CU School of Medicine. "So one mystery is why Fanconi anemia patients don't get [breast cancer](#). In Fanconi, every cell in the body is missing that gene – Fanconi is a very rare thing but it's telling us something about cancers that aren't so rare."

Sclafani's had already shown the effectiveness of resveratrol in treating [head and neck cancer](#), and in this study explored the effect of resveratrol in Fanconi cell lines – could it prevent cancer by eliminating the cancer cells in Fanconi patients?

"It turns out that regular Fanconi cells aren't sensitive to resveratrol in the way they're sensitive to drugs like mitomycin C," Sclafani says. Instead, Sclafani hopes that additional mutations found in Fanconi head and neck [cancer cells](#) will make them sensitive to resveratrol in a way normal Fanconi cells are not. His recent results will be presented at the upcoming meeting.

"It's an interesting population," says Sclafani "and one that may hold

information about many kinds of cancer."

Provided by University of Colorado Denver

Citation: Rare genetic disease offers insight into common cancers (2012, September 4) retrieved 1 May 2024 from

<https://medicalxpress.com/news/2012-09-rare-genetic-disease-insight-common.html>

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