Qeios

Peer Review

Review of: "Is There a Hereditary Cancer Resistance Genotype?"

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This is an informative review aiming to catalog any known genetic predisposition that can lead to lower cancer risk in the population. The writing style is descriptive, yet simple. The author discusses different genetic variants that lower individual cancer risks as well as overall cancer risks. I have a couple of suggestions that I believe would make this review more informative:

1. It would have been nice to see a table listing the gene names, their functions, variations associated with reduced predisposition to cancer, and citations. Such a table may be useful as a quick reference.
2. I also suggest the author mention the lower than expected cancer risks in individuals presenting somatic mutations occurring in utero that are often found in different cancer types. This is known as a “developmental paradox'” that occurs when a mutation in a powerful oncogene happens during embryonic development. Surprisingly, while these same mutations are thought to be the drivers for aggressive cancers when they occur sporadically in adults, they often result only in benign overgrowth syndromes when they occur in utero. Some examples are individuals with Proteus Syndrome (AKT1 Gene), Sturge-Weber Syndrome (GNAQ Gene), Maffucci Syndrome (IDH1/IDH2 Genes), and PROS syndrome (PIK3CA Gene). Such a discussion will suggest that cancer predisposition is not merely a product of 'favorable' or 'unfavorable' genetics, but is fundamentally influenced by the spatiotemporal context—the specific timing and tissue environment in which a mutation arises.

Declarations

Potential competing interests: No potential competing interests to declare.

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