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Experts opinion on Genetic testing: The future of oncology

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G enetic Testing: The Future of Oncology

The future of DNA profiling: From personalized medicine

They scan the DNA of their patients for variants related to cancer or cardiovascular disease so that those affected can undergo preventive treatments or adopt habits that help them minimize the risk.

This approach to personalized medicine holds great promise for today's science. About 5 to

10 percent of all cancer cases are thought to be related to genetic mutations that are inherited (passed down from parent to child). Having a hereditary genetic mutation does not mean that you are destined to have cancer irretrievably, but that you have an increased risk of developing a certain type or types of cancer

Medical tests can examine for many inherited genetic mutations. This type of test is called a predictive genetic test. Most people do not need this type of genetic testing.

Generally recommended when there are certain types of cancer you might consider this type of test if:

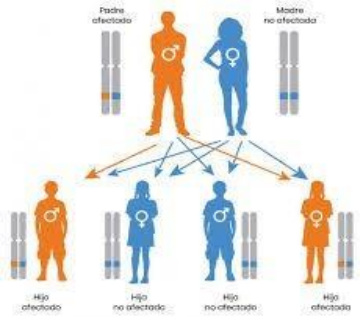
1. He has several first-degree relatives (mom, dad, siblings, children) with cancer.
2. Many family members on one side of their family have had the same type of cancer.
3. A group of cancers in your family is known to be related to a single genetic mutation (such as cancers of the breast, ovary, colorectal, and pancreas in the family).
4. A family member has more than one type of cancer.
5. Family members have had cancer at a younger age than normal for this type of cancer.
6. Direct family members have cancers that are related to inherited cancer syndromes.
7. A family member has rare cancer, such as breast cancer in a man or retinoblastoma (a type of cancer of the eye).
8. Ethnicity (eg Ashkenazi Jewish ancestry is related to ovarian and breast cancers).
9. A physical finding is related to hereditary cancer (such as having many polyps in the colon).
10. One or more relatives have already had a genetic test that found a mutation.

Other things to consider: Genetic test results affect not only you but also affect family members who share your genes. Not everyone is likely to want to know if they are at increased risk for the disease. Knowing that you or a family member may be at an increased risk of cancer can be upsetting. The possibility of having a certain genetic mutation or transmitting the affected gene to children can also lead to feelings of guilt or anger.

Precision medicine in Oncology, through the integration of clinical, pathological, and molecular data, allows obtaining a deeper knowledge of the biological tumor profile of each patient. In this context, the implementation of new next-generation sequencing (NGS) sequencing technologies in clinical practice has been fundamental. There is a wide range of NGS sequencing techniques that can be used depending on the application you want to give them. The correct interpretation of the molecular changes detected by these techniques is key for their proper use in clinical practice.

Impact of genetic studies of a hereditary cancer syndrome:

Genetic studies of cancer susceptibility can have many implications for patients. For this reason, it is important that patients receive adequate genetic counseling. During this process, patients receive information about their future cancer risk, the cancer risk of their children and other family members, the possibility of follow-up and/or prevention measures, their reproductive options, and the responsibility of having to share the results. with their relatives. Some patients express sadness, anger, anxiety, guilt over the possibility of passing the mutation on to their offspring, and concern about their cancer risk. It is important to understand the psychological impact of genetic studies since it influences decision-making on monitoring and prevention measures and on family communication. Patients indicate that their main motivations for conducting a genetic study are to decrease the feeling of uncertainty, make follow-up decisions, and help their families to have information about their cancer risk, especially their children.



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