MYH-Associated Polyposis

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Overview

What is MYH-associated polyposis?

MYH-associated polyposis (MAP) is a hereditary condition. People with MAP tend to develop multiple adenomatous colon polyps during their lifetime and will have an increased risk of colorectal cancer [2]. An adenomatous polyp is an area where the normal cells that line the inside of the colon begin to make mucous and form a mass. A polyp is benign (noncancerous) but can eventually turn malignant (cancerous, meaning it can spread to other parts of the body). It is also likely that people with MAP will develop polyps and colorectal cancer at a relatively young age, in their 20s to 50s.

MAP has only recently been described, and there is much to be learned about the condition. MAP appears to be similar to other hereditary conditions of familial adenomatous polyposis [3] (FAP) and attenuated familial adenomatous polyposis [4](AFAP). It is currently unknown if people with MAP have an increased risk of polyps or cancer in other parts of the digestive tract, such as the stomach or small intestine.

What causes MAP?

MAP is a genetic condition. This means that the risk of colon polyps and colorectal cancer [2] can be passed from generation to generation in a family. Mutations (alterations) in the *MYH* gene are known to cause MAP.

How is MAP inherited?

Normally, every cell has two copies of each gene: one inherited from the mother and one inherited from the father. MAP follows an autosomal recessive inheritance pattern, in which a mutation needs to be present in both copies of the gene in order for a person to have an increased risk of getting that disease. This means that each parent must pass on a gene mutation for a child to be affected. A person who has only one copy of the gene mutation is called a carrier. When both parents are carriers of a recessive gene mutation, there is a 25% chance that a child will inherit two mutations and be affected.

How common is MAP?

Most colorectal cancer [2] is sporadic (occurs by chance with no known cause). The percentage of colorectal cancer that can be attributed to MAP is unknown. It is estimated that as many as one in every 100 people may carry a single mutation in the *MYH* gene.

How is MAP diagnosed?

MAP is considered as a possible diagnosis when a person has multiple adenomatous colon polyps but does not have a mutation in the *APC* gene associated with FAP [3] and AFAP [4]. It may also be considered if someone has brothers or sisters with multiple colon polyps, but there is no history of colon problems in previous generations. MAP is diagnosed when a person is found to have two mutations in the *MYH* gene. There are two common mutations in *MYH* called *Y165C* and *G382D*.

What are the estimated cancer risks associated with MAP?

The specific cancer risks associated with MAP have not been determined. The risk of colorectal cancer [2] is considered to be significantly increased, and there may be an increased risk of other cancers of the digestive tract as well.

What are the screening options for MAP?

There are no specific screening guidelines for MAP, but it has been suggested that screening for polyps and colorectal cancer in people with MAP

should be similar to screening in people with FAP [3] or AFAP [4].

It is important to discuss with your doctor the following screening options, as each individual is different:

- Colonoscopy [5] every two to three years, beginning at age 18
- Colectomy (surgical removal of the colon) may be considered if polyps cannot be managed with regular colonoscopy

Screening options may change over time as new technologies are developed and more is learned about MAP. It is important to talk with your doctor about appropriate screening tests.

Learn more about what to expect when having common tests, procedures, and scans [6].

Questions to ask the doctor

If you are concerned about your risk of colorectal cancer [2], talk with your doctor. Consider asking the following questions of your doctor:

- What is my risk of colorectal cancer [2]?
- How many colon polyps have I had in total?
- What type of colon polyps have I had? (The two most common types are hyperplastic and adenomatous.)
- What can I do to reduce my risk of cancer?
- What are my options for cancer screening?

If you are concerned about your family history and think your family may have MAP, consider asking the following questions:

- Does my family history increase my risk of colorectal cancer?
- Should I meet with a genetic counselor?
- Should I consider genetic testing [7]?

Additional resources

Guide to Colorectal Cancer [2]

The Genetics of Colorectal Cancer [8]

Familial Adenomatous Polyposis [3]

Attenuated Familial Adenomatous Polyposis [4]

What to Expect When You Meet With a Genetic Counselor [9]

Colon Cancer Alliance

www.ccalliance.org [10]

C3: Colorectal Cancer Coalition

www.fightcolorectalcancer.org [11]

To find a genetic counselor in your area, ask your doctor or visit the following websites:

National Society of Genetic Counselors

www.nsgc.org [12]

National Cancer Institute

www.cancer.gov/cancertopics/genetics/directory [13]

Links:
[1] http://www.cancer.net/about-us
[2] http://www.cancer.net/node/18701
[3] http://www.cancer.net/node/18852
[4] http://www.cancer.net/node/18503
[5] http://www.cancer.net/node/24481
[6] http://www.cancer.net/node/24959
[7] http://www.cancer.net/node/24895
[8] http://www.cancer.net/node/24898
[9] http://www.cancer.net/node/24907

[10] http://www.ccalliance.org
[11] http://www.fightcolorectalcancer.org/
[12] http://www.nsgc.org
[13] http://www.cancer.gov/cancertopics/genetics/directory