CANCER COLORECTAL CANADA | COLORECTAL CANCER CANADA

THE DON MCQUAIG FOUNDATION
Get Personal
UNLOCK YOUR TREATMENT OPTIONS

UNDERGOING CHEMOTHERAPY?

DISCUSS DPYD TESTING WITH YOUR DOCTOR

Less than 1% of patients taking 5FU and capecitabine die from their treatment. This occurs only in patients with a germline genetic variation in the DPYD gene; not everyone has a DPD deficiency.

FLUOROPYRIMIDINES AND DPD DEFICIENCY

Fluoropyrimidines (FP) - (5-Fluorouracil (5-FU), capecitabine, and tegafur) are commonly used anti-cancer drugs in colorectal cancer and other cancers.

Dihydropyrimidine dehydrogenase (DPD) enzyme helps our bodies break down and 5FU and Capecitabine.

DPD deficiency is a condition in which the body cannot break down these drugs due to deficiency of the DPD enzyme.

If you are DPD deficient, chemotherapy drugs build up in your body and you are more likely to have severe side effects.

It is very rare not to have DPD in the body (a complete DPD deficiency), but it is more common to have low or very low levels (a partial deficiency).

EXPECTED SIDE EFFECTS OF FLUOROPYRIMIDINES IN DPD DEFICIENT PATIENTS

If you are DPD deficient and receive treatment with these medicines, fluorouracil can build up in your blood, leading to severe and life-threatening side effects such as:

- Neutropenia (low levels of neutrophils, a type of white blood cells needed to fight infection)
- Neurotoxicity (damage to the nervous system)
- Severe diarrhea
- Stomatitis (inflammation of the lining of the mouth).
- Symptoms of serious side effects included severe stomach-area abdominal pain, bloody diarrhea, vomiting, fever, and chills.

BETWEEN 2 TO 8% OF PEOPLE HAVE A PARTIAL DPD DEFICIENCY, WHICH DOESN'T USUALLY CAUSE SYMPTOMS.

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DPD TESTING

DPD testing [either the enzyme activity of dihydropyrimidine dehydrogenase (DPD) or the DPYD genotype] identifies patients at higher risk for toxicity who may be treated more safely with a lower drug dose.

Treatment plan:

- Patient who completely lack DPD must not be given any fluorouracil medicines.
- For patients with partial deficiency, the doctor may consider starting cancer treatment at lower doses than normal or stopping flucytosine treatment if severe side effects occur.

The German Guideline Program in Oncology's guidelines for treating colorectal cancer recommends testing for dihydropyrimidine dehydrogenase (DPD) deficiency before initiating fluoropyrimidine treatment, and states that genotype testing of the DPYD gene, specifically testing for the DPYD*2A polymorphism, can be performed.

PATIENT RECOMMENDATIONS

The DPYD test will assess the risk of side effects or may indicate the need to change the treatment to reduce the likelihood of toxicity occurring.

For anyone receiving chemotherapy, be extremely vigilant in reporting ALL side effects to your care team, especially if the drugs you are taking to manage a side effect are not working. Contact your medical team or go to the ER if your temperature goes over 100.5°.

It is very important to speak with your doctor about any and all the side effects you have. But also, it is important that all oncologists have informed discussions with their patients about the genetic testing for DPYD. DPYD screening will improve the quality of care of cancer patients across Canada and save lives.

IT IS ESSENTIAL THAT ALL PATIENTS STARTING CANCER TREATMENT WITH FLUOROURACIL GIVEN BY INJECTION OR INFUSION (DRIP) OR WITH THE RELATED MEDICINES, CAPECITABINE AND TEGAFUR BE TESTED FOR THE LACK OF THE DPD ENZYME.