OBJECTIVES

To analyse DPYD gene mutations in all patients who are candidates for receiving a fluoropyrimidine-based regimens and their influence on the individualization of cancer treatment.

MATERIAL AND METHODS

Observational, retrospective study
July 2020 to July 2022

- Age
- Sex
- Type of cancer

Genotyping test for DYPD

Loss-of-function variants in the DPYD gene:
- c.1905+1G>A (rs3918290) that identifies the DPYD*2A haplotype
- c.1679T>G (rs55886062) that identifies the DPYD*13 haplotype

Reduced function variants in the DPYD gene:
- c.1129-5923C>G (rs56038477) that identifies the HapB3 haplotype
- c.2846A>T (rs67376798)

RESULTS

638 DPYD gene determination

- Mean age 63 years
- 53% men

Cancer types
- Colon 34%
- Rectal 20%
- Breast 29%
- Gastric 7%
- Pancreatic 10%

- 32 (5.0%) had some mutation in the DPYD gene
- 4 (0.6%) patient was heterozygous for c.1905 + 1G> A
- 1 (0.16%) patient was heterozygous for c.1679T>G
- 4 (0.6%) patients were heterozygous for c.2846A>T
- 23 (3.6%) patients were heterozygous for c.1129-5923C>G

All intermediate metabolizers

- It’s recommended to start treatment with a dose reduced to 50%

The individualization of treatment was:
- 16 patients started treatment at 50% of the dose
- 7 patients the chemotherapy regimen were changed
- 7 patients adjuvant therapy were dismissed
- 1 patient received radiation therapy alone
- 1 patient was not treated

CONCLUSION

The determination of DPYD polymorphisms prior to the start of treatment with fluoropyrimidines, allows to identify DPD-deficient patients, and avoid may experience serious side effects when treated with fluoropyrimidines; and thus clinicians’ decisions are influenced by the results of DYPD genotyping.