PHARMACOGENETIC-GUIDED TREATMENT IN PATIENTS WITH DYHYDROPIRYMIDINE DEHYDROGENASE (DPD) DEFICIENCY

Fernández-Fradejas J[1], Morín-Rodríguez M[2], Gemeno-López E[1], Delgado-Silveira E[1], Moreno-Pelayo MÁ[2], Álvarez-Díaz AM[1]

[1] Pharmacy Department. Hospital Universitario Ramón y Cajal. Instituto Ramón y Cajal de Investigación Sanitaria (IRYCIS)
[2] Genetics Department. Hospital Universitario Ramón y Cajal. Instituto Ramón y Cajal de Investigación Sanitaria (IRYCIS)

BACKGROUND AND IMPORTANCE

In 2020, the European Medicines Agency recommended that patients should be tested for the deficiency of DPD prior to treatment with fluorouracil, capecitabine or tegafur.

AIM AND OBJECTIVES

- To assess the prevalence of *DPYD* variants in cancer patients treated with fluoropyrimidines.
- To evaluate the safety of pharmacogenetic guided treatment in patients with DPD deficiency.

MATERIAL AND METHODS

Study design and inclusion criteria

- Prospective, observational study at a third level hospital.
- Cancer patients who underwent genotyping test for DPD deficiency between 1 November 2021 and 15 September 2022 were included.

DPYD genetic testing

DNA was obtained from peripheral blood simples.

Four *DPYD* polymorphisms were analyzed:

- rs3918290
- rs55886062
- rs67376798
- rs75017182

Data collection

Both Demographic and clinical data were obtained from electronic medical records.

DPD deficiency and clinical outcomes assesment

- Patients were classified as normal, intermediate or poor metabolizers according to the result of pharmacogenetic test.
- Grade 3-4 toxicities in intermediate and poor metabolizers were screened during the first two cycles of treatment.

RESULTS

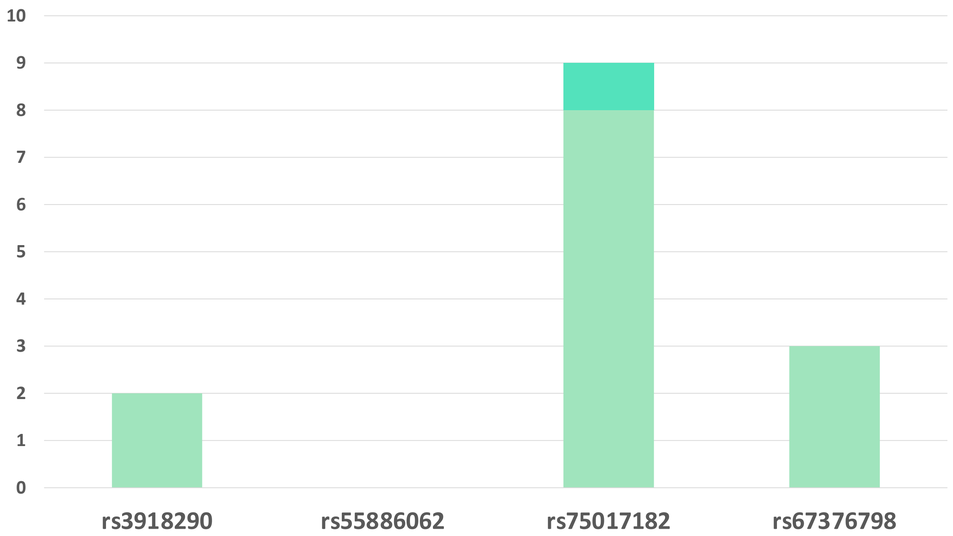
Patients

- N = 345 (52.6% male)
- Age (mean) 68.3 (SD 11.7)

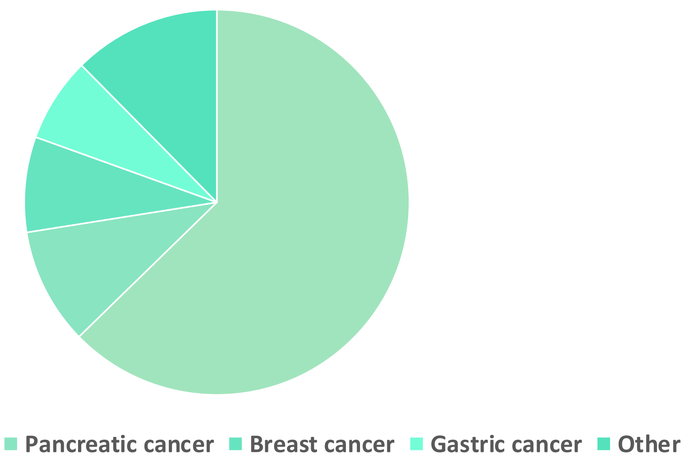
DPD deficiency prevalence

- Fourteen patients were classified as intermediate metabolizers.
- No poor metabolizers were identified.

Graphic 2. *DPYD* polymorphisms



Graphic 1. Cancer diagnoses



Clinical outcomes

- Eleven of the intermediate metabolizers received fluoropyrimidine based chemotherapy with an initial 50% dose reduction.
- Patients underwent treatment without suffering any severe adverse event.
- No further dose reduction or treatment delays were required in these patients.

CONCLUSION AND RELEVANCE

- Overall, 4.1% of the patients of our cohort had partial DPD deficiency.
- Treatment individualization based on *DPYD* genotyping can be useful to avoid severe adverse events in patients treated with fluoropyrimidines.

5PSQ-132
jffradejas@salud.madrid.org
@j_ffradejas