

THE ROLE OF IRON RELATED GENE VARIANTS IN LIVER DISEASE SEVERITY AND IRON METABOLISM PARAMETERS IN CHRONIC HEPATITIS C PATIENTS TREATED WITH DIRECT-ACTING ANTIVIRALS



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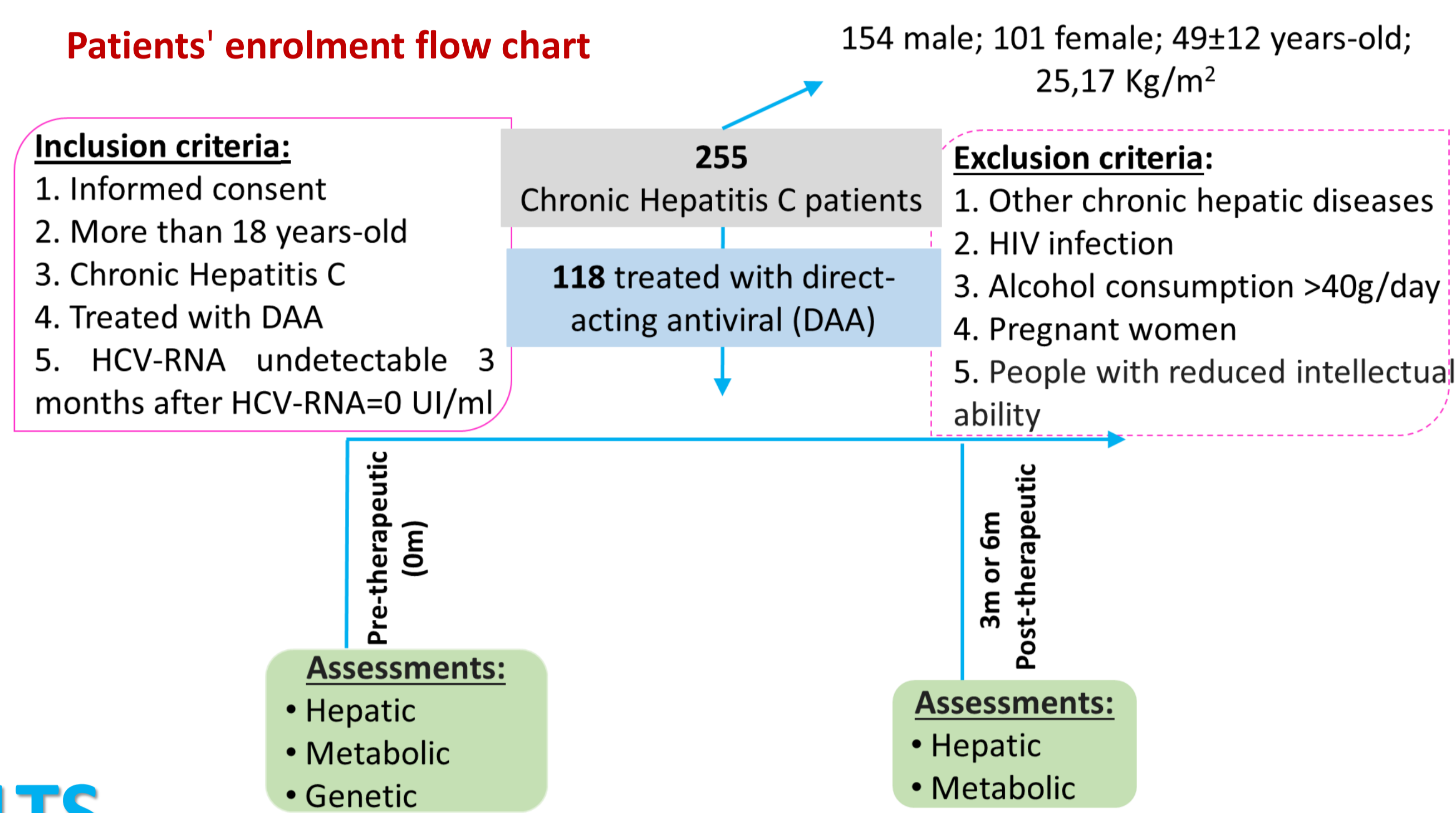
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INTRODUCTION AND OBJECTIVES

- Chronic hepatitis C (CHC) is usually associated with iron overload, which may modulate the severity of liver disease.
- Direct-acting antivirals (DAAs) have made CHC treatment faster and more efficient. However, little is known about their effect on liver disease severity and iron metabolism disruption.
- This study aimed to evaluate the role of iron related gene variants in liver disease severity and iron status associated parameters in CHC patients treated with DAAs.

MATERIALS AND METHODS



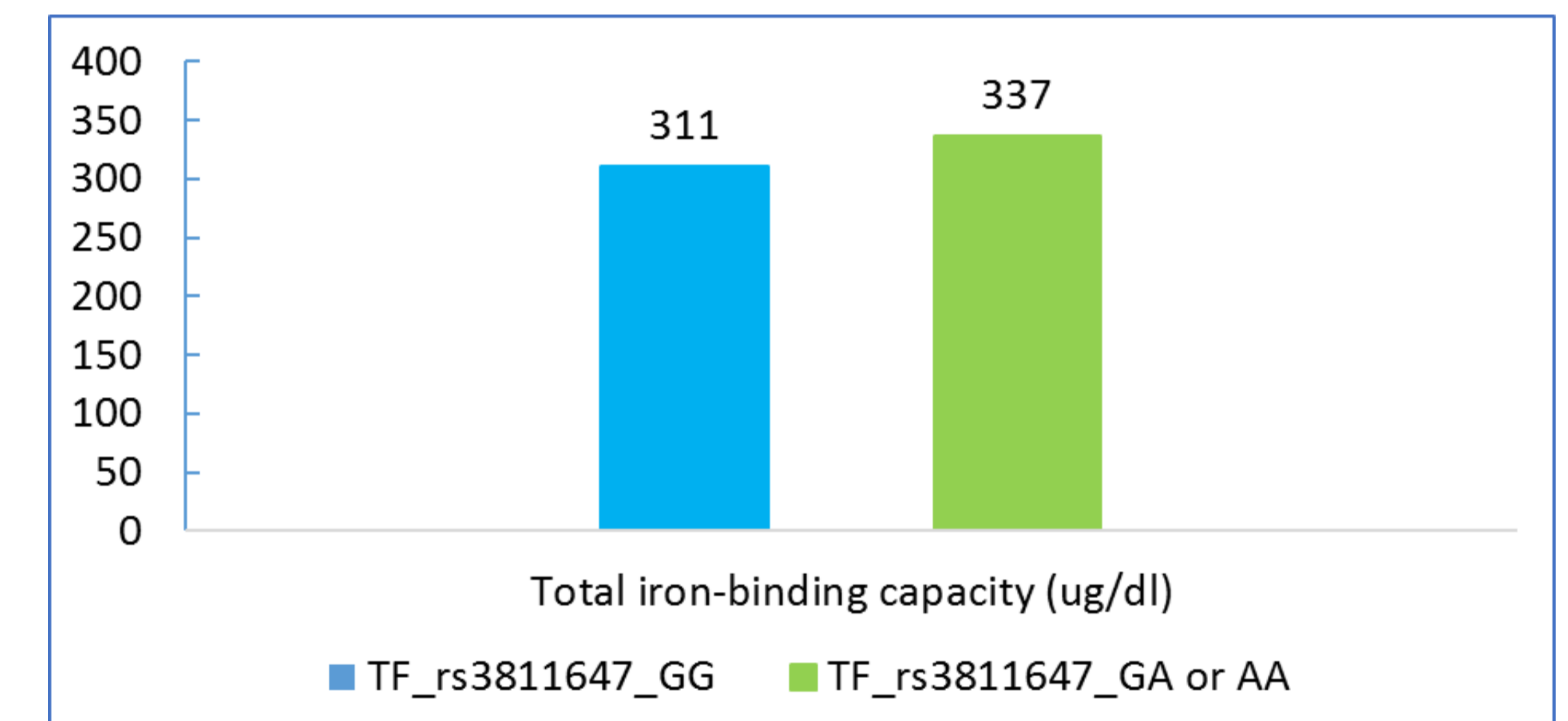
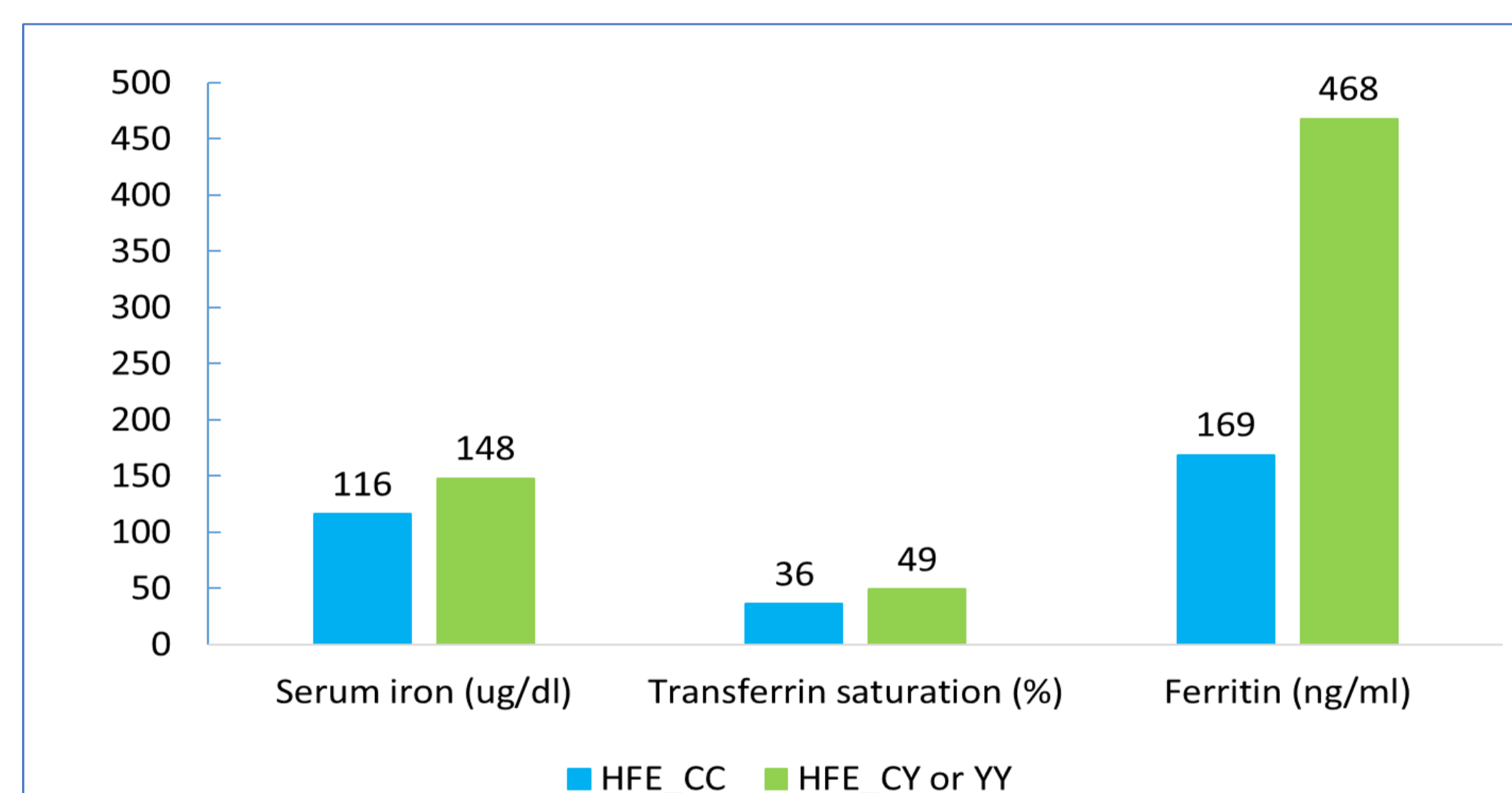
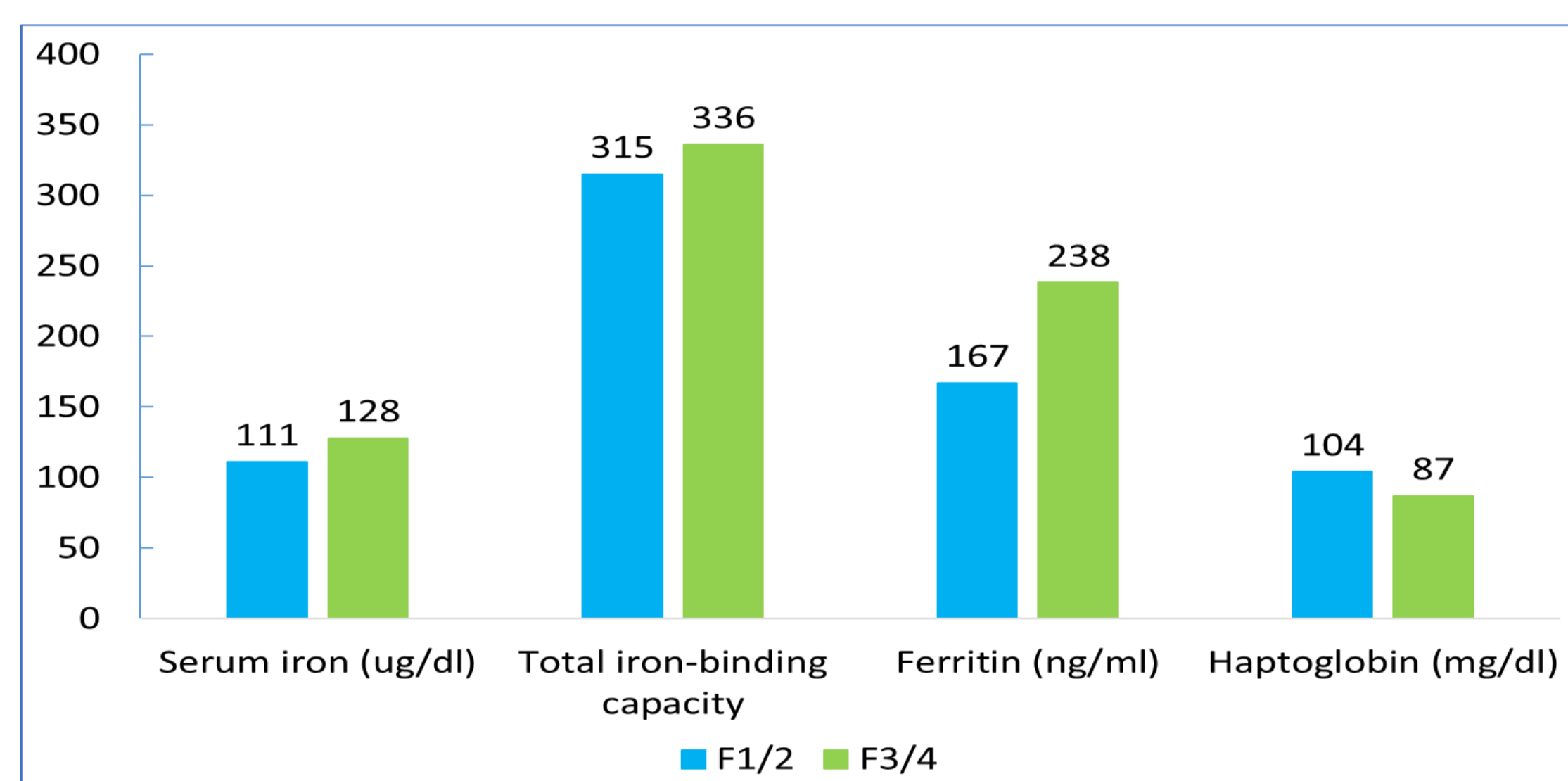
ASSESSMENTS	VARIABLES	MATERIALS AND METHODS
Hepatic	Hepatic fibrosis	Transitory hepatic elastography/FibroScan
Metabolic	Serum iron (Fe)	Standard methods (plasma/serum)
	Ferritin (FT)	
	Total iron-binding capacity (TIBC)	
	Transferrin saturation(TFS)	
Genetic	Haptoglobin (Hp)	(DNA)
	HFE_H63D (HH, HD, DD)	
	HFE_C282Y (CC, CY, YY)	
	TF_rs3811647 (GG, GA, AA)	PCR and Sanger sequencing

• Statistical analysis was performed using SPSS 23.0.
• Values of continuous variables described as average.

RESULTS

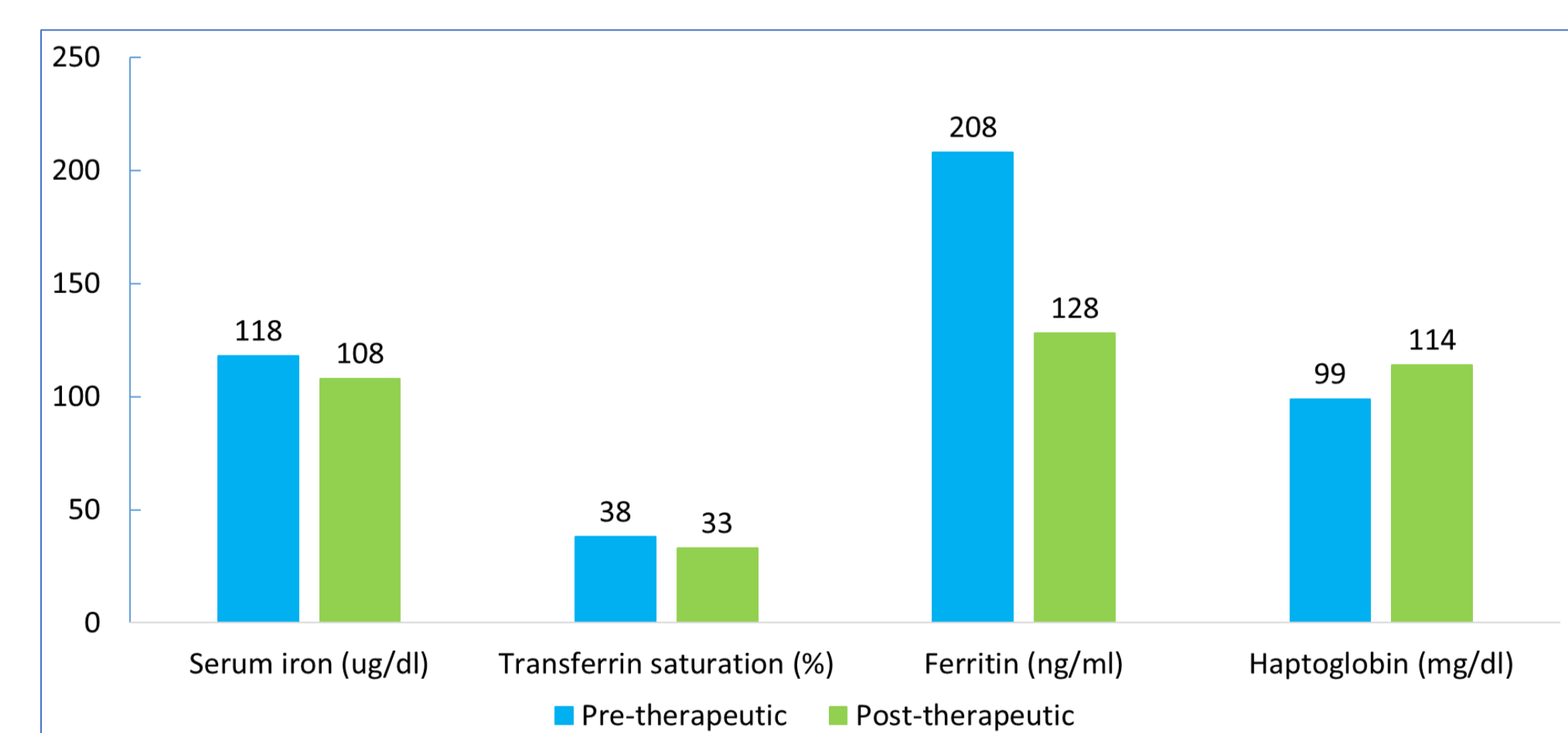
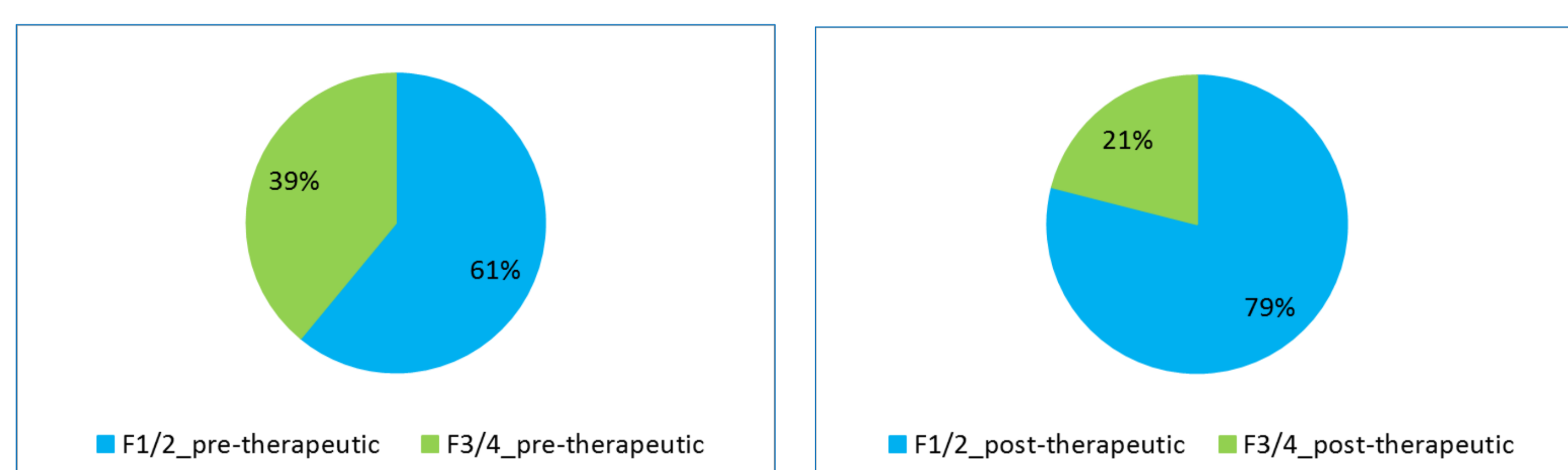
PRE-THERAPEUTIC

- Patients with **higher fibrosis grade (F3/4)** had: Increased levels of serum iron (p=0.030), total iron-binding capacity (p=0.025) and ferritin (p=0.026), and decreased haptoglobin (p=0.048).
- Patients with **HFE_CY** or **HFE_YY** presented: Increased level of serum iron (p=0.008), transferrin saturation (p=0.003) and ferritin (p=0.002).
- Patients with **TF_rs3811647_GA** or **_AA** presented: Increased total iron-binding capacity (p=0.029).



POST-THERAPEUTIC

- Increased frequency of patients with **lower fibrosis grade (F1/2)** (p <0.001).
- Decreased serum iron (p = 0.007), transferrin saturation (p <0.001) and ferritin (p = 0.007), and increased haptoglobin (p = 0.001).



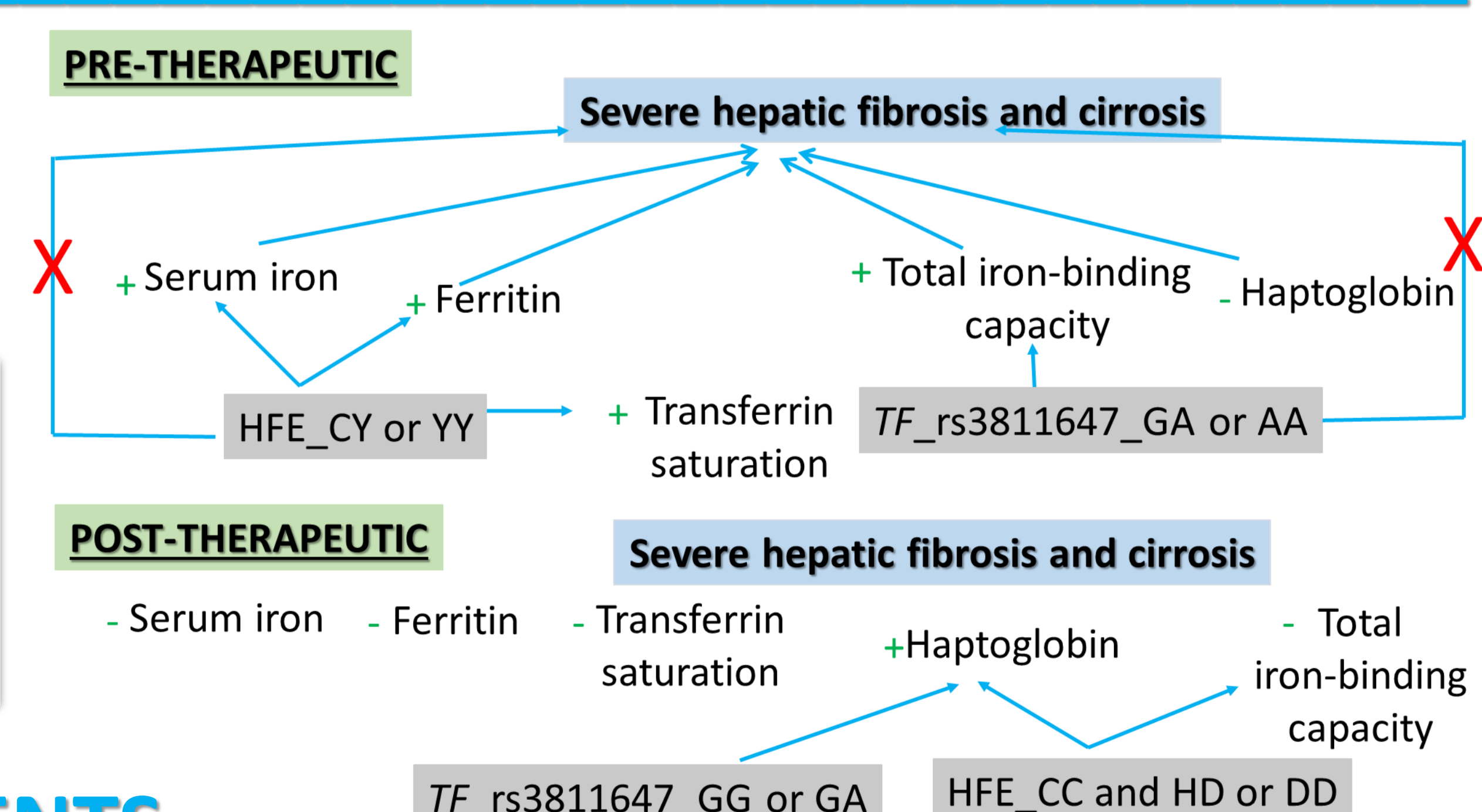
- Only patients **HFE_CC** and **HFE_HD** or **HFE_DD** had: decreased total iron-binding capacity (p = 0.006) and increased haptoglobin (p = 0.013).
- Only patients **TF_rs3811647_GG** or **_GA** presented: increased haptoglobin (p = 0.006).

CONCLUSION

- Specific genetic variants in iron related genes may have a relevant role in the predisposition for severe liver disease in CHC patients before DAAs treatment, and in the improvement of iron status after HCV clearance.

Before DAA treatment, genetic polymorphisms **HFE_H63D** and **TF_rs3811647** may indirectly influence the severity of liver disease through iron-related metabolic parameters.

After DAA treatment, genetic polymorphisms **HFE_H63D**, **HFE_C282Y** and **TF_rs3811647** influence iron-related metabolic changes induced by elimination of HCV.



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