

Diagnostic Importance of HDL, LDL, GGT to Platelet Ratio, GGT to Albumin Ratio in Hepatocellular Adenoma, HCC and Liver Metastasis



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INTRODUCTION

Hepatocellular carcinoma (HCC) is a malignant neoplasm of the liver. Nowadays, alpha fetoprotein (AFP) is the most important tumor marker in the diagnosis of hepatocellular carcinoma. However, a significant proportion of HCC patients are AFP negative (AFP<20 ng/mL). In addition, imaging methods sometimes cannot distinguish between malignant and benign neoplasm. Such reasons necessitate the use of new noninvasive and simple markers. The aim of this study was to evaluate the diagnostic value of LDL, HDL, GGT (gamma glutamyl transpeptidase) albumin ratio and GGT platelet ratio in patients with HCC, liver metastases and hepatocellular adenoma.

MATERIAL & METHOD

We retrospectively analyzed 201 patients admitted to Bezmialem Vakif University Hospital between 2012 and 2022. Among these patients, 6 patients had hepatocellular adenoma, 56 patients had AFP (+) HCC, 26 patients had AFP (-) HCC and 63 patients had liver metastases. 50 patients were selected as the control group. Kruskal-Wallis Test was used to analyze the changes in HDL, LDL, GGT to albumin ratio and GGT to platelet ratio between these groups.

RESULTS

Figure 1: The proportions of categories of research

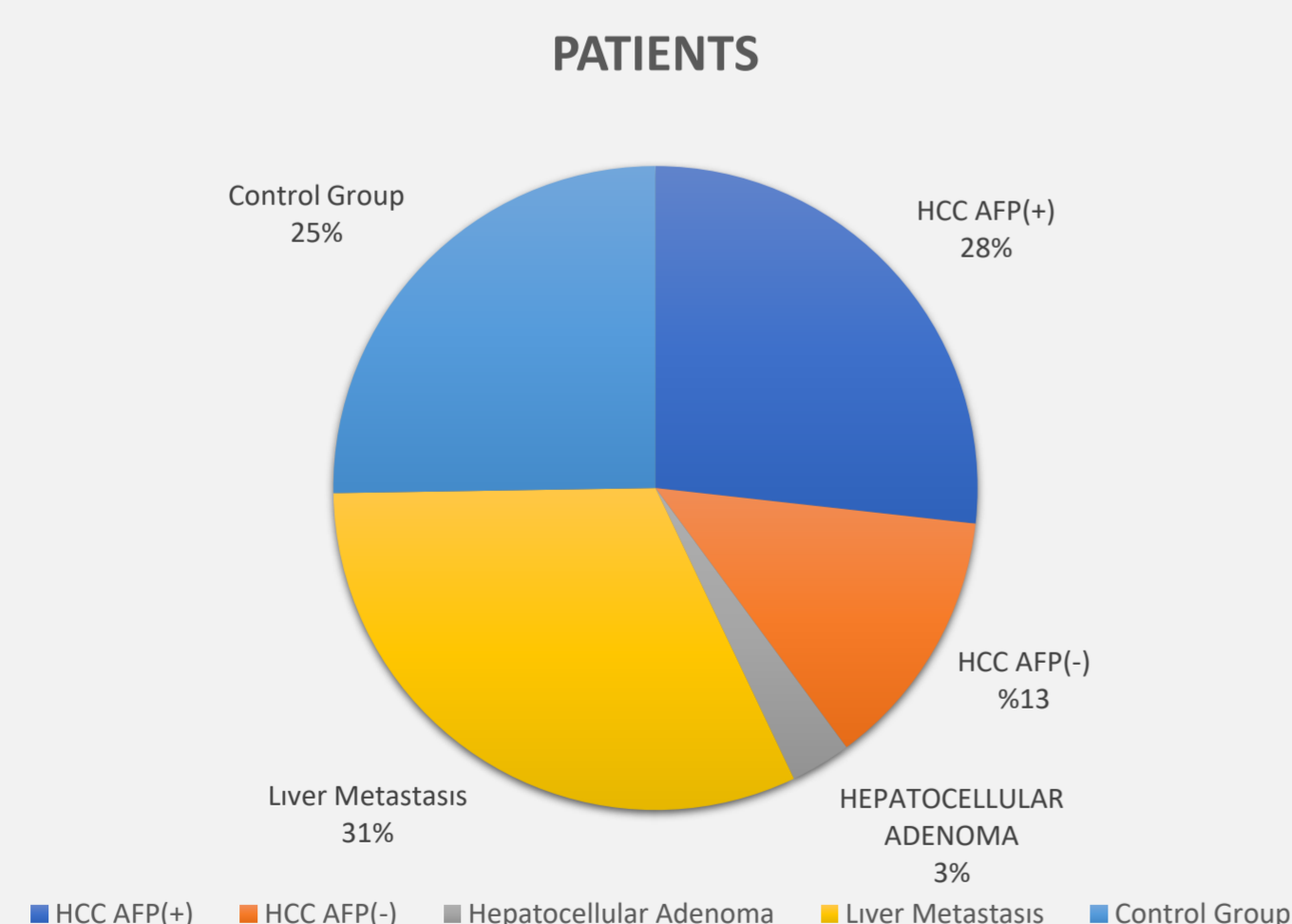


Figure 2: Comparison of HDL level in AFP (+) HCC, AFP (-) HCC, liver metastasis and hepatocellular adenoma patients and control group

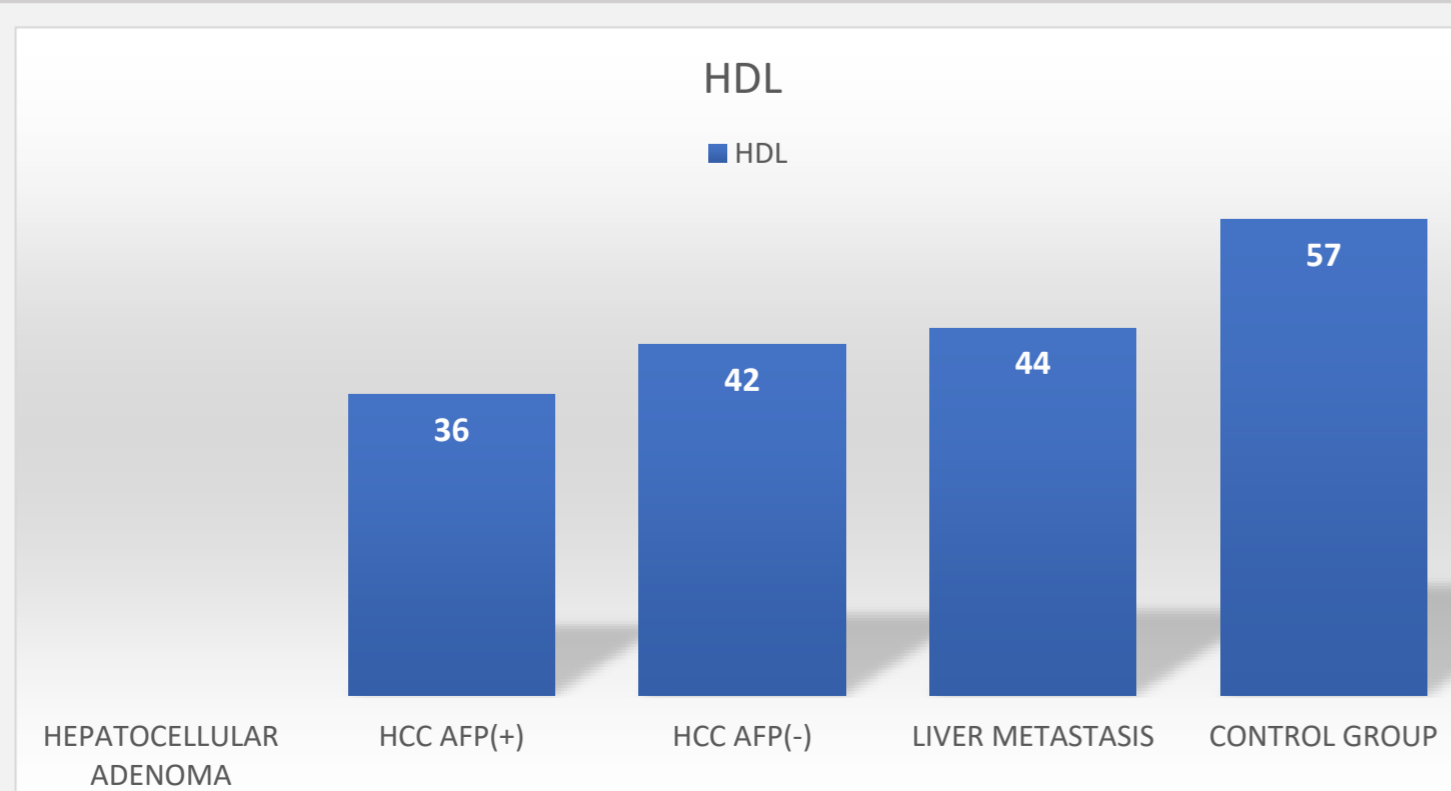


Figure 3: Comparison of GGT albumin ratio in AFP (+) HCC, AFP (-) HCC, liver metastasis and hepatocellular adenoma patients and control group.

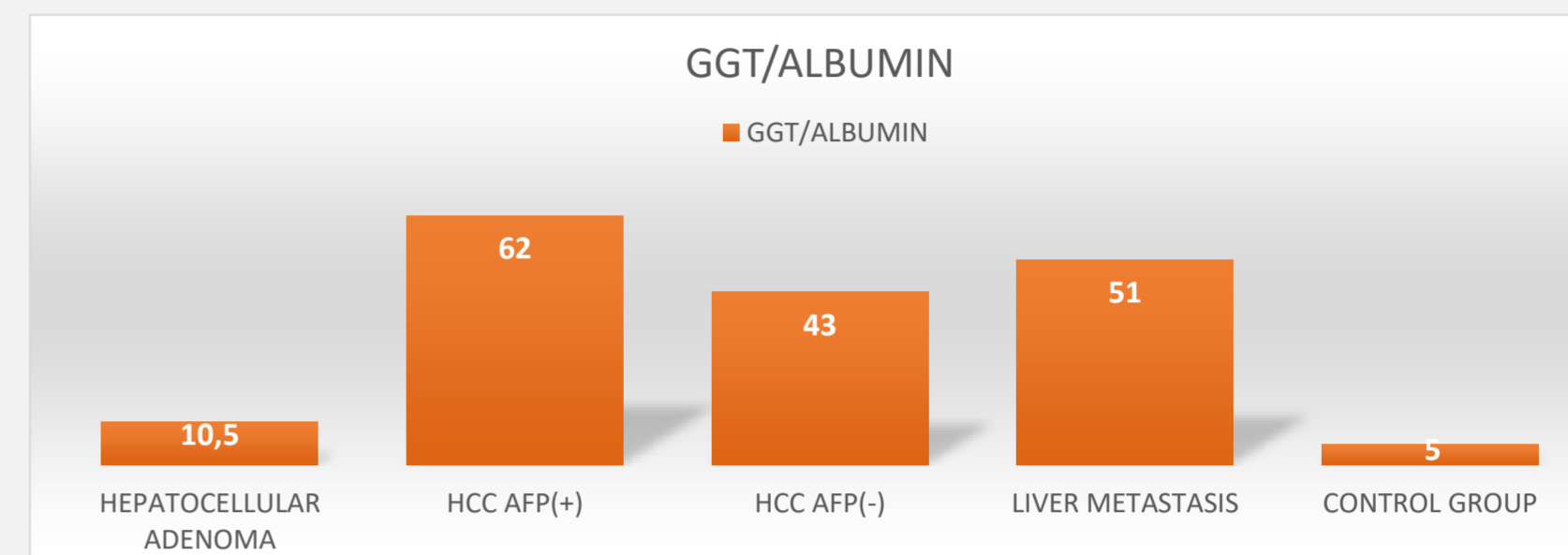


Figure 4: Comparison of GGT platelet ratio in AFP (+) HCC, AFP (-) HCC, liver metastasis and hepatocellular adenoma patients and control group

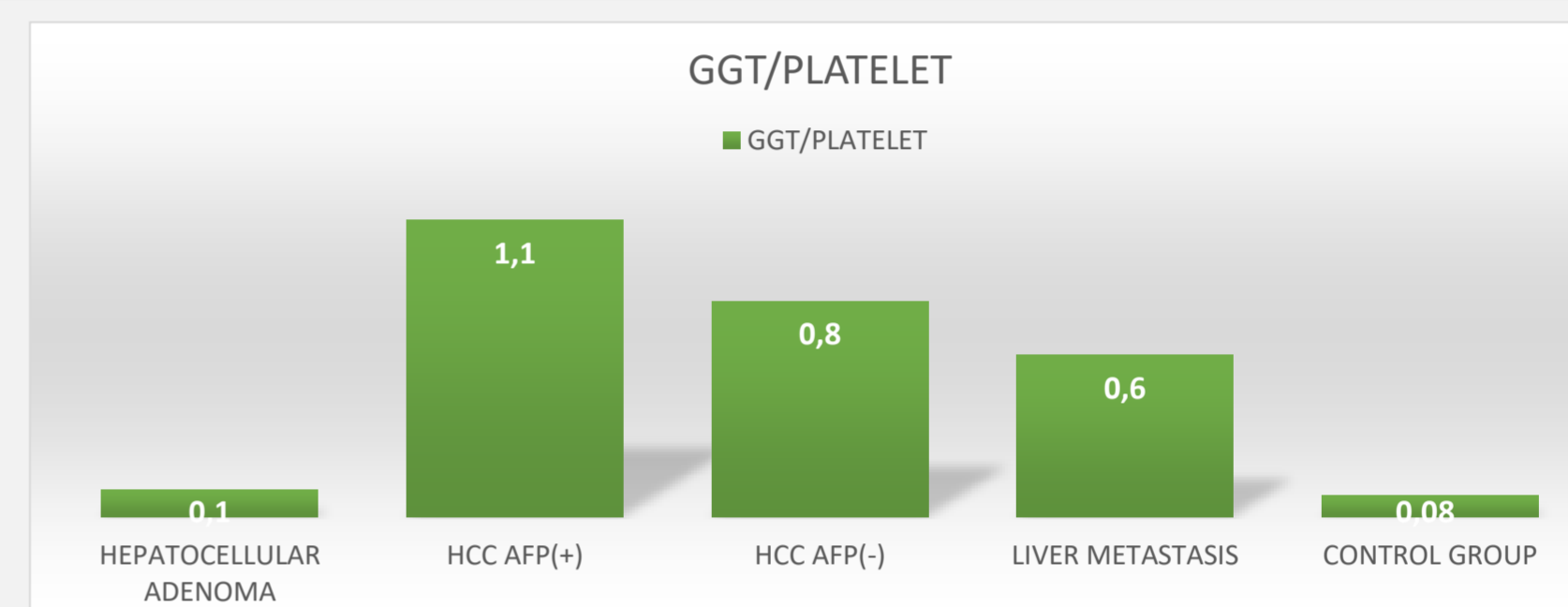


Table 1: Demonstration of the relationship between HDL, LDL, GGT/albumin and GGT/platelet between HCC AFP (+), HCC AFP (-), HA, liver metastasis and control group.

	HA (n= 6)	HCC AFP (+) (n= 56)	HCC AFP (-) (n= 26)	Liver metastasis (n=63)	Control group (n=50)	p-value
Age	40	69	69	61	38	P = 0,8
Gender						
Males	1(0,5%)	47(22,5%)	19(9%)	27(13%)	11(%5)	
Females	5(3%)	9(4,5%)	7(3,5%)	36(19%)	39(20%)	
GGT/Albumin	10,4	62	43	51	5	P<0,001*
	0,1	1,1	0,8	0,6	0,08	P<0,001*
GGT/Platelet	-	36	42	44	57	P<0,001*
HDL	-	-	-	-	-	P=0,428
LDL	-	-	-	-	-	

Abbreviations: HA, Hepatocellular adenoma; HCC, hepatocellular carcinoma; AFP, Alpha-Fetoprotein; GGT, G, γ-glutamyl transpeptidase; HDL, high-density lipoprotein ratio; LDL, low-density lipoprotein.

CONCLUSION

The results of this study show that HDL, GGT to platelet ratio and GGT to albumin ratio have an important role in the diagnosis of liver neoplasms and in the differential diagnosis of primary liver cancer and liver metastases. These values are significant for hepatocellular adenoma, but the number of patients is not sufficient. Therefore, more studies are needed to come to a conclusion about hepatocellular adenoma.

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