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The Connection between Celiac Disease and Hepatic Steatosis: High Levels of Pigment Epithelium-Derived Factor

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Dear Editor,

We read with great interest the study entitled “Pigment epithelium-derived factor affects angiogenesis in celiac disease” by Akpınar et al. [1]. In this study, which was the first of this type in the literature, the authors reported high levels of pigment epithelium-derived factor (PEDF) in patients with celiac disease, an inflammatory process. PEDF is a protein that belongs to the serpin protease inhibitor family having multifunctional effects such as antiangiogenic, anti-inflammatory, and neuroprotective properties [1]. Due to these features, PEDF has been considered important in recent scientific studies.

Levels of PEDF were also investigated in patients with hepatic steatosis. Yılmaz et al. [2] demonstrated that serum levels of PEDF were significantly increased in patients with biopsy-proven nonalcoholic fatty liver disease and were associated with hepatic steatosis independently of traditional risk factors. Nonalcoholic fatty liver disease has become a major public health problem worldwide, and its spectrum extends from isolated steatosis involving mild fatty infiltration to active injury in association with inflammation (nonalcoholic steatohepatitis), cirrhosis, and even hepatocellular carcinoma [3].

Previous studies revealed that fatty liver disease is more common in patients with celiac disease, and that celiac disease is more

common in patients with hepatic steatosis [4, 5]. Inflammation plays an essential role in the pathogenesis of both celiac disease and hepatic steatosis, and high levels of PEDF determined in both diseases suggest that they occur on a common background.

Based on this information, when a patient with high levels of PEDF is diagnosed with celiac disease, further investigations should be performed for the presence of hepatic steatosis. On the contrary, we also suggest that celiac disease should be considered as a priority in patients diagnosed with hepatic steatosis and having high levels of PEDF, in addition to growth retardation and gastrointestinal symptoms.

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The authors have no conflicts of interest to declare.

Author Contributions

All authors wrote the paper and performed final proofreading.

References

- 1 Akpınar MY, Kahramanoglu Aksoy E, Pirincci Sapmaz F, Ceylan Dogan O, Uzman M, Nazligul Y. Pigment epithelium-derived factor affects angiogenesis in celiac disease. *Med Princ Pract*. 2019;28(3):236–41.
- 2 Yılmaz Y, Eren F, Ayyıldız T, Colak Y, Kurt R, Senates E, et al. Serum pigment epithelium-derived factor levels are increased in patients with biopsy-proven nonalcoholic fatty liver disease and independently associated with liver steatosis. *Clin Chim Acta*. 2011 Aug;20;412(23–24):2296–9.
- 3 Masarone M, Federico A, Abenavoli L, Loguercio C, Persico M. Non alcoholic fatty liver: epidemiology and natural history. *Rev Recent Clin Trials*. 2014;9(3):126–33.
- 4 Reilly NR, Lebwohl B, Hultcrantz R, Green PH, Ludvigsson JF. Increased risk of non-alcoholic fatty liver disease after diagnosis of celiac disease. *J Hepatol*. 2015 Jun;62(6):1405–11.
- 5 Bakhshipour A, Kaykhaei MA, Moulaei N, Mashhadi MA. Prevalence of coeliac disease in patients with non-alcoholic fatty liver disease. *Arab J Gastroenterol*. 2013 Sep;14(3):113–5.