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Can Patients with Chronic Liver Diseases Withstand Ramadan Fasting?

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Communication

Ramadan is a holy month for Muslims all around the world. During this lunar-based month, healthy adult Muslims are obligated to abstain from eating, drinking, smoking, or using oral medications from predawn to sunset. Followers will typically eat just after sunset (Iftar; the first meal served to daytime fasting followers) and again before dawn (Sohor; last meal followers eat before the beginning of fasting) and they can eat in between (1). The Islamic lunar Hijri calendar is 11 days shorter than the Gregorian solar calendar, and therefore, the month of Ramadan can occur in any season of the year. The hours spent on fasting can vary from 12 to 18 h, depending on the seasonal and regional features, and this ultimately will affect the ability of individuals and patients to fast. In the North Pole, the day time is very long and may reach up to 22 hours; toward the equator the temperature and humidity are high. These entire environmental factors directly decrease the ability of patients to complete one month of continuous fasting. The studies focusing the impact of fasting during Ramadan on different liver diseases are scarce (2,3) and that is why no structured guidelines for fasting and liver diseases(4) have been set up.

We conducted a prospective observational study (5) to shade the light on the impact of fasting during Ramadan in the summer time on liver cirrhosis and portal hemodynamics. We followed 40 cirrhotic patients who intended to fast during the summer of 2014 through the whole month of Ramadan. Our patients were examined by Congestion index (CI) of the portal vein as a non-invasive indicator of short-term changes in the portal blood flow, while liver function tests were determined as an indicator of long-term changes in liver functions. These tests were done at baseline just before they began fasting and immediately after finishing the wholly month while CI was done during fasting and after iftar to evaluate portal flow changes. Our patients were advised to postpone sohor to the last time, do not delay iftar, also were kept on the nutritional support of branched chain amino acids during night time, besides avoiding daytime diuretic therapy.

A total of 38 patients completed the whole month fasting and two patients discontinued fasting due to the development of variceal bleeding. The total number of complicated patients in our cohort were 7 patients, these included development of lower limb edema, increasing ascites, increasing jaundice and development of overt hepatic encephalopathy and showed a statistically significant increase from fasting to postprandial status ($P<0.001$), with statistically significant increases from fasting to postprandial status in Child class A ($P<0.001$), and B ($P<0.001$). We did not find a statistical significance between patients with complications and those without complications ($P=0.6$). There was a statistically significant rise in the serum bilirubin after Ramadan. Deterioration noticed as advanced Child classes, development of lower limb edema, increasing ascites, increasing jaundice and overt encephalopathy.

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Table 1. Summary of the published Egyptian studies focusing Ramadan fasting and chronic liver diseases

	Elnadry et al (2).	Elfert et al (3).	Mohamed et al (5).
Year of publication	2011	2011	2016
Year of study	2010	2010	2014
Centers	Single	Multiple	Single
Season of Ramadan	Late summer-Early autumn	Late summer-Early autumn	Summer
Type of study	Prospective control	Prospective observational	Prospective observational
Number of patients	202	300	40
Main findings of the study	• Chronic hepatitis; no changes by fasting • Increased risk of bleeding in fasting cirrhotics • The frequency of development of Child C increased in fasting cirrhotics	•BMI, serum glucose, ALT, AST, GGT, and ALP decreased •serum bilirubin increased significantly after full Ramadan • Child A liver cirrhosis and with no history of GI bleeding may tolerate fasting Ramadan • Child C cirrhosis associated with GI bleeding or diabetes mellitus should be advised not to fast	•Cirrhotic patients showed significant short term changes in the portal blood flow • Cirrhotic patients with Child A and B can fast with good medical and nutritional care • Since fasting has been associated with complications and deterioration of liver functions in the long-term event, patients with Child class C should be prohibited from fasting
Major limitations	• Single centre	• No control group	• Small number • no control group • lack of long term follow up • Single centre

And our study concluded that cirrhotic patients showed significant short-term changes in the portal blood flow, however, these changes were not linked to complications or deteriorations noticed in the liver functions and can be accommodated especially in patients with Child class A and B. Therefore, they can fast with good medical and nutritional care. Since fasting has been associated with complications and deterioration of liver functions in the long-term event, patients with Child class C should be prohibited from fasting.

To answer the question addressed as a title of this article, it is essential to divide patients with chronic liver diseases into patients with chronic hepatitis, liver cirrhosis Child class A, liver cirrhosis Child class B, and liver cirrhosis Child class C. Also, it is essential to know that fasting healthy adults show minor changes in the liver biochemistry during Ramadan (6) especially drop of serum total proteins. So, patients with chronic hepatitis can withstand fasting (2), the same is also applicable for patients with Child class A cirrhosis Because both patients groups showed neither major changes in liver biochemistry nor complications in the studies shown in Table1 (3,5). For, the subgroup of patients with Child class B and C the situation is quite different. Cirrhotics with Child class C should be prohibited from fasting (5), these patients are fragile and they will deteriorate rapidly and develop complications. Patients with Child class B are prone to deteriorate to class C under the effect of prolonged fasting, and fasting in these patients should be individualized. The authors, relying on their practice do not recommend this group of patients to fast, although these patients were enrolled in their study.

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