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Circulating microRNAs (miR-21, miR-223, miR-885-5p) along the clinical spectrum of HCV-related chronic liver disease in Egyptian patients

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Introduction/Aim: Increasing evidence suggests that several pathological hepatic diseases have been related to alterations of miRNAs expression. The present study was designed to assess the significance of serum miR-21, miR-223, and miR-885-5p as potential biomarkers in different clinico-pathological sequelae of HCV-related chronic liver disease.

Patients and Methods: Serum miR-21, miR-223, and miR-885-5p were quantified by real-time quantitative PCR in 60 Egyptian patients with HCV-related liver disease in addition to 25 healthy controls. HCV patients were classified into: chronic HCV (n=15), liver cirrhosis (n=15), and hepatocellular carcinoma (HCC) (n=30).

Results: Serum levels of miR-885-5p in cirrhotic patients (with or without HCC) were significantly higher than the non-cirrhotic patients; $p=0.007$ and healthy control; $p=0.001$. However, no such significance was detected between HCV patients with and without HCC; $p=0.12$. Serum miRNA-885-5p was able to discriminate cirrhosis \pm HCC from healthy controls using ROC analysis: AUC 0.85, 87% sensitivity and 80% specificity. As regards serum miR-21, HCC patients had significantly higher levels than non-HCC patients (non-cirrhotic and cirrhotic groups); $p=0.048$ and the control group; $p=0.002$. ROC could differentiate HCC from control group; AUC 0.89, 80% sensitivity, 80% specificity. Serum albumin and bilirubin were significantly correlated with miRNA-885-5p ($r=-0.27$, $p=0.04$) ($r=0.42$, $p=0.001$) respectively, but such correlation was not observed with serum miRNA-21. In contrast, miRNA 223 showed no significant difference across the studied groups.

Conclusion: Along the spectrum of HCV-related chronic liver disease, miR-885-5p could be a potential marker for advanced liver damage while miR-21 could be a helpful diagnostic marker for HCC.

Biography

Mona Zaky Nasser has obtained her Master and MD degree from Cairo University. She has spent one year (2008-2009) as a Postdoctoral Researcher in Washington University in ST Louis, USA. She has been involved in the establishment of the molecular diagnostic unit in Beni-Suef University. Moreover, she is the Director of the quality assurance program in the clinical chemistry unit in Misr University for Science and Technology. She has supervised many Post-graduate candidates and participated in number of conferences where she has presented few posters and oral presentations. Her research interest includes molecular diagnostics and genetic background of human cancer.

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