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Expression of Beclin-1, Bcl-2, Bcl-xL, Bad, and Bax in HCV patients in relation to grade of hepatic fibrosis

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Autophagy plays an important role in the pathogenesis of many diseases. However, its role is still unclear. We investigate the mRNA expression of Beclin-1 (major autophagic agent), pro-apoptotic agents (Bad, Bax), and anti-apoptotic agents (Bcl-2, Bcl-xL) in blood samples withdrawn from Genotype 4 HCV-infected patients with different stages of hepatic fibrosis. The study was a retrospective one that included 30 healthy people (Control Group), 64 chronic hepatitis C patients with early hepatic fibrosis stages [grade 0 and 1 fibrosis] (F0-1 Group), and 36 chronic hepatitis C patients with Late hepatic fibrosis stages [grade 2 and 3 fibrosis] (F2-3 Group). qPCR was used to measure mRNA expression in the samples. Beclin-1, Bad, and Bax mRNA expression in F0-1 Group were significantly higher than both F2-3 Group and Control Group ($P < 0.001$). While Bcl-2, and Bcl-xL mRNA expression in F0-1 Group were significantly lower than both F2-3 Group and Control Group ($P < 0.001$). Beclin-1, Bad, and Bax mRNA expression were increased at the early stages of hepatic fibrosis in HCV patients, and were declined as the fibrosis progressed to more advanced stages, while Bcl-2, and Bcl-xL mRNA expression were increased as fibrosis progresses. This shows that autophagy has an important role in the early stages of hepatic fibrosis in Genotype 4 HCV patients. These findings provide an insight into the pathogenesis of chronic HCV infection, and the effect of autophagy on liver fibrosis. This may be used to provide possible biomarkers and contribute to a new therapeutic approach.

Biography

Tarek K Motawi is a Professor of Biochemistry, Faculty of Pharmacy, Cairo University, Egypt. He obtained PhD in Pharmaceutical Sciences in 1984, MSc in Pharmaceutical Sciences in 1979 and BSc in Pharmaceutical Sciences from Faculty of Pharmacy, Cairo University in 1976. He worked as an Instructor in 1976 and became Assistant Lecturer in 1980, Lecturer in 1984 and Assistant Professor in 1989. He was promoted to the position of Professor in 1994 and worked as Head of the Department of Biochemistry, Faculty of Pharmacy, Cairo from 2008 to 2014.

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