

## Lactobacillus acidophilus and bifidobacterium bifidum reduce chronic HCV progression

Maii Nabieh<sup>1</sup>, Mohamed L. Salem<sup>2</sup>, Nanis Allam<sup>1</sup> and Hassan EL-Batae<sup>3</sup>

<sup>1</sup>Microbiology Department, Faculty Science, Tanta University, Egypt

<sup>2</sup>Department of Zoology, Faculty of Science, Tanta University, Egypt

<sup>3</sup>Department of Tropical Medicine, Kafr El-Shiekh University, Egypt

**Background:** Hepatitis C virus (HCV) is a major leading cause of pathogenesis of liver disease which was treated with IFN-based therapy and recently with Sovaldi®. There is a challenge to explore new drugs. Probiotics are the most common natural therapeutic that can ameliorate liver dysfunction. Aim: study the antiviral and antibacterial responses of the probiotics in patients with chronic (HCV). **Materials and Methods:** patients were treated with IFN/ribavirin, or both IFN and probiotics capsule that was containing L. acidophilus and Bifidobacterium spp. and administered as one capsule per day for a month. Blood and urine samples were collected before and after treatment strategies and were processed for quantitative determination of HCV PCR assay, identification of bacteria by VITEK2 system and 16S r RNA gene sequencing, estimation of probiotics antibacterial activity, as well as counts of leukocytes and CD3+ T cells and CD56+ natural killer cells. **Results:** Treatment of patients with L. acidophilus and Bifidobacteria spp. enhanced the responses of the patients to IFN- $\alpha$  and ribavirin treatment, as shown by the viral titter of HCV PCR assay that clarified the antiviral activity and also the antibacterial activity against the most common bacterial infections in patients with chronic HCV. Additionally, it increased the numbers of CD3+ and CD56+, **Conclusions:** Treatment with probiotics before IFN- $\alpha$  and ribavirin therapy can act as a supportive supplement with antiviral, positive immune response and antibacterial activities.

**Keywords:** Bifidobacterium befidum; Lactobacillus acidophilus; HCV infection, Probiotics

Editor-in-Chief: Prof. M.L. Salem, PhD - Article DOI: 10.21608/JC BR.2021.63823.1180