

EFFECT OF PROBIOTICS ON THE MICROBIOME IN DRUG-INDUCED HEPATITIS

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Background: Harnessing the potential to enhance hepatocyte detoxification by modulating the diversity and abundance of the intestinal microbiota through probiotic intervention presents a compelling avenue for correcting and preventing homeostatic disorders along the intestinal-liver axis. The aim of this study is to identify the biological parameters indicative of impaired interactions along the intestinal-liver axis during drug-induced hepatitis.

Materials and methods: Paracetamol-induced hepatitis in animals was simulated by orally administering 2500 mg/kg paracetamol for three days [1]. DNA isolation from rat samples utilized ZymoBiotics DNA Microprep kits. Sequencing libraries, generated by 16S rRNA gene amplification, were assessed for quality using a Qubit 2.0 instrument.

Results: Preliminary findings indicate a clear association between drug-induced hepatitis and alterations in the gut microbiota along the intestinal-liver axis. We observed the changes in bacterial phyla and a reduction in the genus Akkermansia. Probiotic intervention has shown promising results in various aspects of gut health. It can modulate the gut flora, enhance hepatocyte detoxification, and restore a balanced microbiome background. In the context of hepatic encephalopathy, probiotics have been found to increase beneficial microflora, reduce pathogenic bacteria and endotoxemia, and

prevent overt hepatic encephalopathy. Probiotics have also been shown to improve the clinical outcomes of hepatic encephalopathy, reduce ammonia concentration, and decrease the severity of adverse events [2].

Conclusions: By elucidating the intricate connections between drug-induced hepatotoxicity, the gut microbiome, this study contributes to the development of targeted interventions for enhancing liver health and overall well-being.

Key words: drug-induced hepatitis, gut microbiota, probiotic, intestinal-liver axis

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