VITAMIN D METABOLISM IN HEPATORENAL SYNDROME

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Background. Hepatorenal syndrome (HRS) is an extreme form of renal dysfunction in patients with cirrhosis, characterized by reduced renal blood flow and glomerular filtration rate. In hepatorenal syndrome, vitamin D deficiency occurs and can lead to various metabolic disorders. **Objective of the study.** To elucidate the biochemical mechanisms of the vitamin D metabolism in individuals with hepatorenal syndrome, evaluate pathological changes, in order to improve diagnosis and to develop effective treatment methods. **Material and methods.** To achieve the proposed goal, it has been made a synthesis of published literature from 2018 to 2023 using 10 bibliographic sources, including those of the Medical Scientific Library of USMF „*Nicolae Testemițanu*", data of the electronic libraries such as PubMed, Medline, Medscape, Hinari and Biomed Central. **Results.** The HRS potentially reduce the liver's ability to convert provitamin D into its active form, calcitriol. The lack of functional hepatocytes and 25 hydroxylase results in diminished synthesis of calcitriol. This can lead to lower calciferol levels in the body and reduced synthesis of vitamin D-binding protein (VDBP), which is produced by the liver. The progressive evolution of renal impairment influences the conversion of vitamin D2 to vitaminD3 as well as the Vitamin D catabolism abnormalities, especially an elevated level of 24-hydroxylase activity, which may result to increased calcitriol degradation. In HRS, the vitamin D insufficiency can disrupt calcium and phosphorus metabolism, potentially leading to osteoporosis or osteomalacia. **Conclusion.** It has been observed that a deficiency in vitamin D manifests itself in cases of hepatorenal syndrome. The observed phenomenon causes disruptions across several physiological systems, including the musculoskeletal, immune, endocrine, calcium, phosphorus regulatory, and nervous systems. **Keywords.** Vitamin D, hepatorenal syndrome, calcitriol, calcium and phosphorus metabolism.