

Abstract

This diploma thesis pursues the topic of vitamin D deficiency, which is rather prevalent in the Czech population. The theoretical part summarizes findings about the systemic function of vitamin D in the human body and its importance in postoperative recovery. We know about vitamin D's impact on xenobiotic detoxification, reduction of oxidative stress, neuroprotection, and immunoregulation. Ubiquitous intracellular vitamin D receptors mediate the extraskeletal effects of vitamin D.

Objectives: The principal aim of the thesis was to demonstrate the difference in the number of postoperative complications and lengths of hospitalization in patients with vitamin D deficiency and patients without vitamin D deficiency. Furthermore, the research aims to discover the relationship between vitamin D and postoperative recovery and evaluate the importance of vitamin D supplementation in preoperative deficiency.

Methods: The practical part uses retrospective data from the database of the Klatovská nemocnice on patients monitored in the internal and osteological outpatient department. The criteria for the selection of patients were performed surgery and measured serum level of 25(OH)D. Postoperative complications were evaluated. The evaluation took into account the patients' age and type of operation. Patients were divided on the basis of serum 25(OH)D levels into 4 groups and the results of the practical part were compared with previous findings on the difference in the recovery of patients after surgery according to whether or not they were deficient in vitamin D before the procedure.

Conclusion:Data from the practical part indicate a tendency for worse postoperative recovery in vitamin D deficiency. However, a causal relationship between the two factors could not be established. Vitamin D remains more of an indicator of health. We do not have sufficient data to confirm the benefit of vitamin D supplementation in the perioperative period. However, taking into account the prevalence of vitamin D deficiency in the population and groups with vitamin D deficiency in the practical part of the work, it is possible to recommend supplementation.

Keywords: Vitamin D, cholecalciferol, ergocalciferol, recovery, post-surgical complications, vitamin D deficiency