

Abstract

This bachelor thesis aims to provide a general overview of complications of musculoskeletal system in pediatric patients diagnosed with acute lymphoblastic leukemia (ALL) undergoing chemotherapy treatment involving high cumulative doses of glucocorticoids. Musculoskeletal complications include steroid myopathy, osteonecrosis and reduced bone mineral density. The first part describes their basic pathophysiological mechanisms and the risk factors of their origin. The second part presents the current possibilities of muscle strength assessment and available exercise programs. Furthermore, diagnosis of osteonecrosis and bone mineral density are presented together with current possibilities of therapeutic intervention.

The thesis also covers characteristics of muscle strength measuring methods and exercise programs along with presentation of the results of individual studies. In the discussion part, there are broken down the limits, advantages and disadvantages of using the muscle strength measuring methods and exercise programs in clinical practice.