Abstract:

Introduction: The topic of this thesis is the Prevention of Osteoporosis in Malabsorption Syndrome. The thesis is divided into two parts; theoretical and practical. The theoretical work in the first part deals with osteoporosis and osteoporosis risk factors with a focus on nutritional factors. Osteoporosis is a systemic metabolic disease of the skeleton characterised by decreased bone mass and changes in the quality of bone tissue. The etiology of osteoporosis is multifactorial. Malabsorption syndrome causes the small intestine, which is essential for absorbing nutrients, to malfunction. In the second part of the theoretical work, attention is paid to malabsorption syndrome and diseases that lead to its development.

Objective: The objective of this work is to draw a comparison between the intake of calcium and other important nutrients in relation to bone metabolism for people with lactose intolerance, and compare this with recommended values and a control group of people without lactose intolerance.

Methods: Dietary habits were evaluated using a questionnaire method and a detailed analysis of a four-day diet. The Nutriservis Professional programme was used to evaluate diets (determine energy values, amount of essential nutrients, fibre, calcium, plus other minerals and vitamins). Bone mineral density was measured usingdual-energyX-ray absorptiometry (DXA).

Results: It was found that on average both groups consumed less calcium than recommended (patients with diagnosed lactose intolerance averaged 83,9% and the control group 63,5% of the recommended daily intake). Both groups also consumed insufficient fibre (patients with diagnosed lactose intolerance consumed 59% and the control group 54% of the recommended daily intake). The group with lactoseintolerance was also found to consume 29,9% more fat, 18,4% more carbohydrates and 81,6% more phosphorus than is recommended on a daily basis. When comparing calcium intake from the diet records and the calcium intake from the International Osteoporosis Foundation questionnaires, a discrepancy in the resulting daily values was found. For the group of patients with diagnosed lactose intolerance, this was 137 mg. For the control group of patients without lactose intolerance, it was 224,5 mg. The results of densitometric measurements indicate a higher incidence of osteoporosis in patients with diagnosed lactose intolerance when compared to the control group. Lactose intolerant patients were found to have a more frequent occurrence of low-trauma fractures after 45 years of ageand had a higher likelihood of having a low-trauma fracture over the next 10 years (FRAX tool).

Conclusion: Alow calcium intake and reduced absorption alongside a higher phosphorus intake, can lead to bone mineral density decline and faster osteoporosis in patients with lactose intolerance. Therefore, it is appropriate for this group of people to ensure the adequate intake of calcium and its proper distribution throughout the day in their natural diets. In the case of insufficient intake, dietary supplements are recommended. It is also appropriate to adjust the intake of other nutrients (to reduce the intake of phosphates, fat and carbohydrates and increase fibre intake) and to ensure regular exercise. These preventive measures can

reduce the risk of developing both osteoporosis and other serious conditions, such as diseases of the cardiovascular system and gastrointestinal tract.

KEY WORDS:

Osteoporosis, malabsorption, lactose intolerance, bone mineral density, calcium