ABSTRACT

Introduction: Osteoporosis is defined as a systemic metabolic disease of skeleton. It is characterized by reduced amounts of bone mass and degradation of bone tissue microarchitecture with increased chances of fractures occurring. Women after menopause are affected by lack of estrogen and therefore have increased risk of osteoporosis.

Goal: The goal of the diploma thesis is to evaluate the nutritional state of women after menopause with osteoporosis (With OP) and without osteoporosis (Without OP) focusing on calcium, proteins and nutrients which are affecting gut microbiota (prebiotics and probiotics).

Methods: Nutritional state was evaluated based on three-day diet analysis and questionnaire about dietary preferences. Amounts of particular nutrients in respondents diets were obtained by using web page www.kaloricketabulky.cz. Bone material densities were measured by dual energy X-ray absorptiometry (DXA).

Results: Nutritional breakdown of diets did not show any statistically significant differences in most of the cases. The only exception was protein and fiber intake, where the group without OP reported higher intake. Both sets of respondents reported higher intake of calories, fats and proteins then recommended. On the other hand, low intake of carbs, fiber, calcium and probiotics was discovered at both groups. From a densitometric point of view, 1/3 radius was the most affected by women with OP, while neck femur was the worst for women with osteopenia. TBC score showed that all respondents have fully or partially degraded bone microarchitecture.

Conclusion: Inappropriate dietary habits can increase risk of fractures. Women without OP had better dietary habits than women with OP. Respondents should care more about balanced intake of macronutrients, increase carbs and lower fat consumption. They should further increase intake of other nutrients (calcium, fiber). They should focus on consuming meals rich in calcium, preferably milk and dairy products, eat more fruit and vegetable to reach dietary reference intake of fiber.

keywords: Osteoporosis; Menopause; Nutrition; Calcium; Proteins; Gut Microbiota