

ABSTRACT

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Title of thesis: *Analysis of antiosteoporotics consumption*

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Introduction and objective: Osteoporosis is becoming a big medical problem of the 21st century accompanying the life prolongation in developed countries. The changes in pharmacoepidemiology characteristics might be expected in the Czech Republic because of increasing number of seniors, pressure on costs savings and health care optimization. The changes would involve numbers of newly diagnosed or treated patients, patients' characteristics and treatment duration and/or costs spent from health care insurance budget. The study aimed at description of costs, trends in patient numbers changes and the other characteristics of antiosteoporotics' treatment in the period from 2005 to 2016 using the data from General Health Insurance Company.

Methods: The data were collected retrospectively from General Health Insurance Company database. Data collection was performed in two phases. The strontium ranelate and hormone derivatives related data in the years 2005 to 2011 were sourced. All the antiosteoporotics related data were sourced in the years 2010 to 2016. The year of prescription, trade name, strength, number of packages, package size, the health care reimbursement costs, age, sex and number of patients were collected. The data were evaluated with descriptive statistics. The median age was defined and the sex ratio was calculated in the 1st phase. The number of patients in each age category and the costs were evaluated in the 2nd phase for each antiosteoporotics. Consumption was evaluated as number of patients (defined as a patient with a minimum one record of reimbursed package in the specific year). The percentage prescription distribution according to prescribing doctor specialization was found out as well.

Results: Overall and individual costs decreased in the evaluated period. The increase, culmination and decrease phase of costs trends and patient numbers was identified at the most of antiosteoporotics. Only denosumab costs and patient numbers increased in the evaluated period. The youngest patients used raloxifen. On contrary, the oldest patients represent

alendronate (inclusively in combination therapy) users. The majority of prescription represented the internal medicines specialization. Specification of the sites prescribing hormone derivatives and parenteral bisphosphonates was not possible to determine.

Conclusion: The entry of bisphosphonates generic drugs to the Czech health care system and newly introduced 5year treatment limit with bisphosphonates caused primarily the decrease in the antiosteoporotics costs and patient numbers. The only biologic drug denosumab, who entered the Czech health care system latest, detected increased costs and patient numbers in the evaluated period. The dominant prescribing specialization of internal medicines covered specialized osteology sites in the evaluated period. The age structure of individual antiosteoporotics adheres to different position of the relevant antiosteoporotics in the treatment schema and defined reimbursement conditions.

Keywords: Osteoporosis, consumption, costs