



GOLD Stage Impact on COPD Direct Medical Costs in the Elderly

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Abstract

Aim: The research was undertaken to assess properly the overall burden of chronic obstructive pulmonary disease (COPD) and its cost matrix and weigh its impact on the national health budget. The hypothesis was that The Global Initiative for Chronic Obstructive Lung Disease (GOLD) stage (disease severity) and duration of hospital treatment significantly influence total direct medical costs.

Methods: 186 elderly patients, with clinically and spirometrically confirmed COPD diagnosis, were randomly selected and assigned to the study. The medical history was taken retrospectively from pulmonologist's records and costs were calculated from tertiary clinic invoice registry. Time span was one year and the Republic Health Insurance Fund perspective as a provider of core services was taken into account. The main clinical endpoints were disease exacerbation and hospital admission. Registered economic data included all inpatient COPD-related medical goods and used services as well as outpatient drug utilization during the observed period of time. Taking into consideration the fact that there is frequent comorbidity in this age group, we carefully excluded all medical resources spent for the treatment of metabolic and cardiovascular disorders which did not necessarily result from the basic diagnosis.

Results: The average elderly COPD patient cost the national health care budget about 137,843.75 CSD (Central Serbian Dinar, the average official exchange rate in 2008 was 50.01 CSD = \$1). Severity grade (GOLD criteria) and duration of hospital treatment, significantly and directly correlated with the overall cost. The structure of medical resources spent per patient per year was: 1,143.58 CSD for outpatient care, 9,986.18 CSD for inpatient drug consumption, 29,727.84 CSD for hospital treatment (admission to the intensive care unit and specialist consultations were included in daily price), 10,499.68 CSD for imaging diagnostics, 8,763.71 CSD for laboratory analyses, 2,097.6 CSD for therapeutic interventions, 5,530.86 CSD for consumable sanitary material and 69,527.01 CSD for outpatient drug consumption. Most expenses resulting from drug consumption were due to antibiotics used to cure infectious complications and mucolytics. The average absolute number of hospital admissions per patient was 1.45 times in a given year. Average duration of hospital admissions was 12.84 days per patient. Fifteen persons died in our sample during the course of study. The average absolute number of outpatient physician examinations was 2.71 times per patient in a given year. There were 25,533,420.48 CSD (or \$510,566.29) of direct medical costs incurred by all patients observed in 2008. Indirect costs were not included.

Conclusion: Financial burden of COPD is huge and it is expected to rise further regarding contemporary life style. According to our findings, costs were mostly caused by exacerbations, hospital admissions and outpatient drug consumption. Policy aimed at early detection of COPD and shortening of hospital stay would contribute to substantial savings in future.

Key words: COPD, Cost analysis of disease, Elderly, GOLD

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