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Health economic epidemiology of obstructive airway diseases

The Obstructive Lung Disease in Northern Sweden Studies – Thesis VII

av

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ABSTRACT

COPD and asthma are common diseases worldwide and entail high costs for the society. The diseases also cause impairment in quality of life for the patients. Most of the health economic studies of COPD and asthma have been based on registry data. There is a lack of studies using health economic data of representative samples derived from studies of the general population when estimating the burden of illness of COPD and asthma. The aim with this thesis was to estimate the direct, indirect and intangible costs of COPD and asthma using well-defined and representative cohorts of subjects with COPD and asthma in northern Sweden.

Telephone interviews were conducted in order to record the resource use due to asthma and COPD and the resource use due to exacerbations of COPD. Three health-related quality of life questionnaires were used for measuring the quality of life for the patients with COPD.

The total costs for asthma were estimated at SEK 15,919 annually per subject with asthma, and the direct costs accounted to 31% and the indirect costs to 69% of the total costs. The costs for subjects with persistent asthma were more than 10 times higher compared to the costs for subjects with mild intermittent asthma, SEK 27,628 and SEK 2,222, respectively. The total societal costs were estimated at about SEK 3,7 billion (95% CI 1.5-5.7) for asthma in Sweden in the ages from 25 to 56 years.

The annual costs for COPD amounted to SEK 13,418 per subject with COPD. The direct costs accounted to 42% and the indirect costs to 58% of the total costs. Subjects with a severe disease had approximately 3 times higher costs compared to subjects with moderate COPD, and more than 10 times higher compared to subjects with mild COPD. The total societal costs for Sweden were estimated at about SEK 9.1 billion (95% CI 6.1-12.8). As COPD to a great extent is an underdiagnosed disease, the total costs were divided into subjects with and without a physician-diagnosis of COPD. The costs for undiagnosed subjects accounted to approximately 40% of the total costs. Costs for exacerbations of COPD were related to severity of the exacerbations and severity of COPD. Severe exacerbations were on average 10 times more expensive than moderate and 60 times more expensive than mild/moderate exacerbations. The total costs of exacerbations during a 4½ months study period amounted to SEK 13,708 for subjects with a severe COPD compared to SEK 294 for subjects with a very mild COPD. The costs of exacerbations comprised to 35-45% of the direct costs of COPD. Severity of COPD was correlated to health related quality of life but less so to generic quality of life measures.

In conclusion, the thesis shows that asthma and COPD are costly diseases for the society. The costs were found to be strongly dependent of the severity of asthma and COPD. The costs of COPD were strongly affected by impaired lung function and exacerbations.

Keywords: COPD, asthma, epidemiology, quality of life, health economics.

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