DRUG-RELATED MORBIDITY
– MODELING THE COST-OF-ILLNESS IN SWEDEN USING PHARMACISTS' OPINION

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Objectives

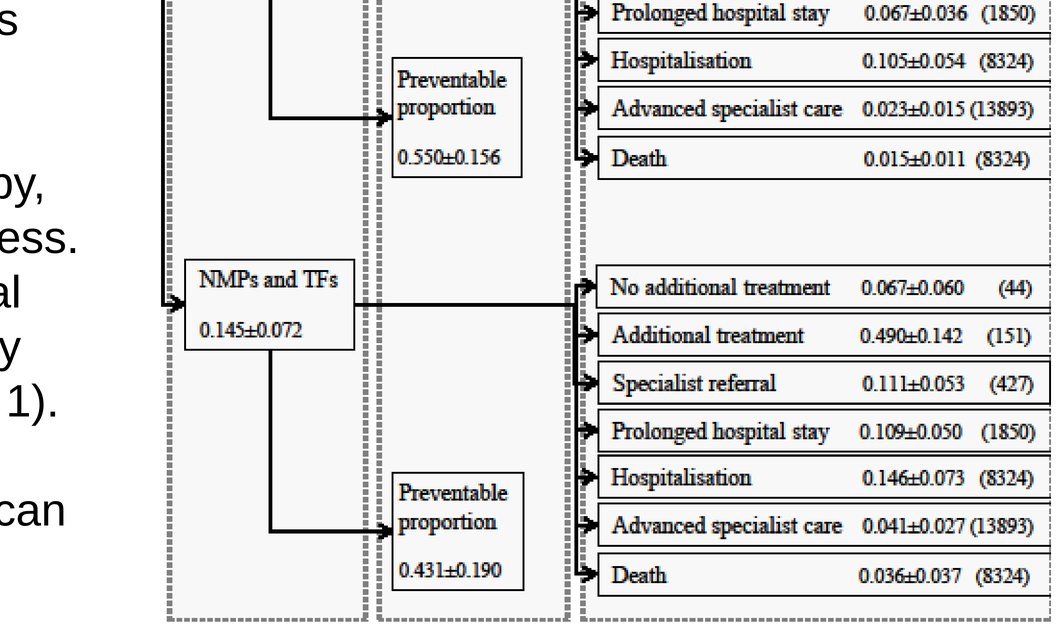
To estimate the proportion of patients with drug-related morbidity and preventable drug-related morbidity, and the cost-of-illness of drug-related morbidity in Sweden based on pharmacists' expert opinion.

Methods

An expert panel of pharmacists (N=29) determined the probabilities of therapeutic outcomes of medication therapy, using a two-round Delphi process. The study applied a conceptual model of drug-related morbidity based on a decision-tree (Fig. 1). The conceptual model was developed based on an American model[1], and adjusted to the Swedish healthcare context.

In the model, drug-related morbidity included new medical problems (adverse drug reactions, drug dependence and intoxications) and therapeutic failures (insufficient effects of medicines and morbidity due to untreated indication).

The cost-of-illness analysis included all direct costs from the healthcare perspective, based on national statistics on costs.



* The preventable proportion was not used in the decision tree modelling.

Figure 1: Layout of the conceptual model of drug-related morbidity, estimates from the pharmacists' expert panel, and pathway costs used for modelling the cost-of-illness of drug-related morbidity.

Abbreviations: *C* pathway cost (EUR), *NMP* new medical problem, *P* average probability, *SD* standard deviation, *TF* therapeutic failure.

Results

The expert panel estimated that 61±14% (mean ± SD) of all patients visiting healthcare suffered from drug-related morbidity, of which 29±8% suffered from new medical problems, 17±6% from therapeutic failures, and 14±7% from a combination of both. The drug-related morbidity was considered preventable in 45±15% of the patients with drug-related morbidity.

It was estimated that 75% of patients with drug-related morbidity required additional healthcare resources due to drug-related morbidity.

The cost-of-illness was estimated to be EUR 997 (2010 prices) per patient visiting healthcare, which corresponds to an annual cost of EUR 6.6 billion to the Swedish healthcare system.

Conclusions

Drug-related morbidity is perceived frequent and often preventable. The estimated healthcare costs for this morbidity are extensive, and comparable in magnitude to the cost of dispensed medicines in Sweden. Effective and cost-efficient methods to reduce drug-related morbidity are needed.

Reference
1. Johnson, J.A., and Bootman, J.L. *Drug-Related Morbidity and Mortality – A Cost-of-Illness Model*. Arch Intern Med 1995, 155:1949-1956.

Conflicts of Interest

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