

Pharmacology and Toxicology 2019: An introduction to pharmacoeconomics, health technology assessment, and multiple-criteria decision analysis - Saeed Taheri - Shahid Beheshti University of Medical Science

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Given increasing constraints on health care resources and cost, there is a need to assess the relative value of high efficacy therapies for different disease including cancers. In addition, decision makers in middle-income countries also need to manage certain therapeutic categories, especially for chronic disease such as MS, in an attempt to control costs and give access to new, often more expensive, therapies within limited health care budgets.

For countries with limited resources, economic evaluations based on decision analytic modeling may be a suitable alternative to extensive trial based economic evaluations. In this presentation, we are going to review the principals of the methods which are common to investigate the value of new therapies including cost-effectiveness studies, Health Technology Assessment (HTA), and Multiple-criteria decision analysis (MCDA). First of all, the concept of cost in pharmacoeconomics would be reviewed in terms of different perspectives such as payer, health system, and etc.

Then, different consequences will be reviewed focusing on the concept of utility and Quality Adjusted Life Years (QALYs). Subsequently, cost-effectiveness plane would be reviewed interpreting the willingness-to-pay threshold for choosing the cost-effective strategies. Then, two common modeling approaches (decision tree and Markov models) would be reviewed.

Afterwards, the limitation of cost-effectiveness studies will be discussed together with the concept of deterministic and probabilistic sensitivity analysis. Finally, the HTA and MCDA methods would be reviewed as alternative or complementary methods to cost-effectiveness studies. In view of a tight healthcare budget, these decision analysis methods may provide healthcare decision makers with the requisite insights to make informed choices.