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Pharmacoeconomics behind next-generation oncology drug development

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ABSTRACT: Molecularly targeted therapy is guided by an understanding of relevant genetic variations among individuals with a particular disease and, when applicable, by the relevant molecular variations in the expression of that disease. This approach has the potential to discriminate potential responders from nonresponders, identify which patients are likely to benefit earlier in the disease pathway, ensure appropriate dosing, reduce incidence of adverse events, and improve overall health gain. Stated otherwise, molecularly targeted therapy maximises the number of appropriately treated patients while minimising the number exposed to the treatment but in whom it ultimately fails. The benefits, however, must be balanced against the cost of screening tests to identify who is most likely to benefit from targeted therapy and against the lifetime costs of treatment.

Keyword: Pharmacoeconomics

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PHARMACOECONOMIC CHALLENGES OF MOLECULAR TARGETED THERAPY

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It is obvious that the status of pharmacoeconomics is now at a critical point. The challenge to health care payors is that they are confronted by the basic economic principle of resource scarcity and infinite demands. Health care resources are limited and pressure is increasing to contain the growth of overall health care costs. Demand is driven by a combination of demographic change, patient knowledge and new technologies. Patient demand fuels the search for new technologies and increases pressure on the reimbursement systems.

Consequently, economic theory is increasingly being applied in health care decisions, specifically in regard to coverage for new technologies. Currently, a large proportion of lifetime health care expenditures occur at the end of life. Targeted therapies can shift the economics from excessive end-of-life spending to investing in prevention, earlier diagnosis, and early treatment of chronic conditions, Fig. 1. The early stages of developing molecularly targeted agents are likely to entail substantial investments in diagnostics and prevention, but savings might accrue during the later stages when diseases are prevented and/or treatments are applied with greater efficiency.[1]

HEALTH TECHNOLOGY ASSESSMENT: Health technology assessment (HTA) is a multidisciplinary process that summarises information about the medical, social, economic and ethical concerns related to the use of a health technology in a systematic, transparent, unbiased and robust manner. Its aim is to inform safe and effective health policies that are patient focused and seek to achieve best value.[2]

Payors, whether they are governments or insurance companies, must be accountable to the taxpayers or policyholders who want to know that their contributions are used in an efficient manner. However, even the most robust HTA is subject to uncertainty from several sources, for example, the relationship between surrogate endpoints and final outcomes, the relationship between efficacy and effectiveness and resource use distri-

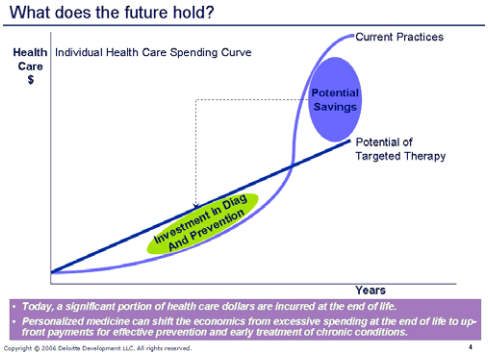

Fig. 1 – Savings from use of molecularly targeted agents could be invested in diagnostics development and cancer prevention.

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