ABSTRACT for „Jahrestagung mit Fortbildungsakademie der Deutschen Gesellschaft für Neurologie DGN“, Deadline for submission: March 31, 2010
Neurowoche, Mannheim, Germany, September 21th-25th, 2010

Cost-effectiveness analysis of Natalizumab versus standard disease modifying treatment with Glatiramer acetate and Interferon-beta for patients with relapsing remitting multiple sclerosis in Germany

Authors:
C. Plesnila-Frank[1], Z. Katsarava[2], V. Limmroth[3], A. Bergmann[4], M. Lang[4], D. Eheberg[1], N. Putzki[2,5]

[1] IMS HEOR, IMS Health GmbH & Co. OHG, München
[2] Abteilung für Neurologie, Universitätsklinikum Essen, Essen
[3] Neurologische Klinik, Kliniken der Stadt Köln, Köln
[4] NTD-studygroup, NeuroTransData GmbH, Neuburg
[5] Klinik für Neurologie, Kantonsspital St. Gallen, Schweiz

Objective: To assess the cost-effectiveness of disease modifying drugs (DMD) (Natalizumab [Nb], interferon-beta [IFN-b], glatiramer acetate [GA]) in treatment of patients with relapsing-remitting multiple sclerosis (RRMS) in Germany.

Methods: A Markov model was developed to estimate the costs and outcomes of DMD versus best supportive care (BSC) in the first line treatment (health economic approach) and second line treatment (guideline recommended approach) of patients with RRMS. Markov states were defined by the expanded disability status scale (EDSS) and the line of treatment (Abb.1). Transition probabilities (such as rates for progression, treatment switches and withdrawals), cost data and quality of life (both reflecting treatment of adverse events and relapses) were derived from clinical trials and literature. The analysis was performed from a societal perspective, over 30 years. Costs and outcomes were discounted at a rate of 3%.

Results: The expected number of relapses was on average 8.3 lower under Nb and 1.1 lower under other DMD compared to BSC. After 30 years 59% of surviving patients in the Nb group remained at an EDSS score 0 to 4, compared with 31% in the other DMD and 8% in the BSC group. The expected total cost per patient was 816,139 Euro for DMD and 847,160 Euro for Nb with 64,481 Euro per quality adjusted life year (QALY) for DMD and 60,938 Euro per QALY for Nb. BSC comes still to average total costs of 627,701 Euro and 53,911 Euro per QALY. Additional costs for an additional QALY (incremental costs) under Nb therapy compared to other DMD leads to 24,919 Euro. For the second line therapy the additional costs per QALY for Nb was 11,191 Euro compared to the IFN-b arm, while the use of Nb is more efficient and less costly compared to GA after IFN-b.

Conclusions: Incremental cost per QALY stay beneath 50,000 Euro/QALY and therewith below the international accepted cost-effectiveness threshold. The clinical and economic findings suggest that use of Nb’s as second line treatment is favourable compared to other DMD. These results are in line with other cost per QALY assessments of modern DMD therapies in other severe indications (e.g. TNF alpha inhibitors in rheumatoid arthritis).

ABSTRACT for „Jahrestagung mit Fortbildungsakademie der Deutschen Gesellschaft für Neurologie DGN“, Deadline for submission: March 31, 2010
Neurowoche, Mannheim, Germany, September 21th-25th, 2010

Number of letters: 2231 (maximum 2500 inclusive blank characters)

Abb.1: Model Overview