Abstracts

COMPARATIVE ANALYSIS OF MULTIPLE SCLEROSIS COST-EFFECTIVENESS MODELS: FOCUS ON THE UNITED STATES MANAGED CARE PERSPECTIVE

Papshev D1, Bennett R2, Al-Sabbagh A2

1RXWORX, Inc, Yardley, PA, USA, 2EMD Serono, Inc, Rockland, MA, USA

OBJECTIVES: To assess the scientific literature for studies evaluating comparative economic value of the five disease modifying drugs (DMDs) approved in the United States (U.S.) for the management of relapsing forms of multiple sclerosis (MS).

METHODS: A comprehensive search of the MEDLINE database, as well as the International Society for Pharmacoeconomics and Outcomes Research (ISPOR) and Academy of Managed Care Pharmacy (AMCP) meeting proceedings was conducted to identify cost effectiveness (CE) analysis studies published or presented from 2004 through May 2007. Studies were critically reviewed with regard to evaluated comparators, primary endpoints, measures of relapse reduction, perspective, timeframe, and cost of therapy. RESULTS: The two identified CE analyses both utilized cost per relapse avoided as the primary endpoint, but the results varied significantly in terms of CE ratios and relative DMD rankings. The primary determinant of these variations was the methodology used to calculate relapse reduction from the data reported in randomized placebo-controlled trials. While the same clinical trials were employed by both models, the number of avoided relapses was based on absolute reduction in the case of Goldberg et al and on relative reduction in the case of Chiao et al, and the models used different assumptions with respect to timeframe, treatment adherence, monitoring costs, contractual discounts, and member co-payments. Due to the limitations inherent to the relative event reduction methodology, the model developed by Chiao et al was highly sensitive to the variation in the average relapse rate prior to treatment.

CONCLUSION: The choice of methodology used to calculate therapeutic impact on relapse reduction can significantly influence the outcome of CE analyses. Considering significant heterogeneity in baseline disease severity among clinical trials in MS, use of absolute reduction in relapse rate may be more appropriate as it more accurately reflects the net clinical benefit.

MODELING THE CLINICAL AND ECONOMIC CONSEQUENCES OF TREATING RELAPSING FORM OF MULTIPLE SCLEROSIS WITH SUBCUTANEOUS VERSUS INTRAMUSCULAR INTERFERON-BETA-1A

Guo S1, Copur D1, Ward A1, O’Brien JA1, Ishak KF1, Bennett R2, Al-Sabbagh A3, Meletiche DM4, Caro JJ1

1United BioSource Corporation, Concord, MA, USA, 2United BioSource Corporation, Montreal, QC, Canada, 3EMD Serono, Inc, Rockland, MA, USA

OBJECTIVES: The Evidence of Interferon Dose-response European North American Comparative Efficacy (EVIDENCE) trial concluded administering subcutaneous (SC) IFNb1a 44 micrograms three times per week was more effective in improving the proportion with relapsing form of multiple sclerosis (RFMS) remaining relapse-free than intramuscular (IM) 30 micrograms weekly after 24 and 48 weeks. This analysis utilized discrete event simulation (DES) to model the potential longer-term clinical and economic implications of this trial. METHODS: This DES predicts the course of RFMS, reads in actual patient profiles from the trial and creates two hypothetical cohorts—one receives SC IFNb1a and the other IM. Patients may suffer relapses with short- and long-term impact on costs and disability, develop new T2 lesions, discontinue treatment, progress to secondary progressive MS (SPMS) or die. Risk equations were derived from specific analyses of trial data for relapse and supplemented with published studies for SPMS and death. Direct medical costs to US payers obtained from literature and databases were reported in 2006 USD and discounted at 3%. Extensive sensitivity analyses were conducted. RESULTS: Based on 100 replications of 1000 patient pairs over four years, SC administration was predicted to allow more patients to avoid a relapse (216 vs. 147). Total mean costs per patient were $79,154 with SC vs. $73,820 with IM, a net increase of $5335. SC IFNb1a was estimated to give a mean of 0.50 relapses prevented, and 23 relapse-free days gained per patient, yielding incremental cost-effectiveness ratios of $10,616 per relapse prevented and $229 per relapse-free day gained. Sensitivity analyses revealed that the result was most sensitive to the cost of treatment, criteria for response, and treatment duration before assessing response. CONCLUSION: SC IFNb1a is predicted to improve health outcomes over four years for a cost that would seem an acceptable trade off.

COST-EFFECTIVENESS ANALYSIS OF THE LIDOCAINE 5% MEDICATED PLASTER RELATIVE TO GABAPENTIN AND PREGABALIN FOR POST-HERPETIC NEURALGIA IN GERMANY

Liedgens H1, Hertel N2, Gabriel A1, Nijjten MJC3, Dakin HA1, Spohrer U1, Poulsen Nautrup B3

1Grunenthal GmbH, Aachen, Germany, 2IMS Health, Nuremberg, Germany, 3Erasmus University, Rotterdam, The Netherlands, 4Abacus International, Bicester, Oxfordshire, UK, 5University Hospital of Kielich, Munich, Germany

OBJECTIVES: To assess the cost-effectiveness of using a lidocaine 5% medicated plaster in place of gabapentin (1800 mg/