have shown that disease-modifying drugs (DMDs) lower the need for more highly effective MS therapies.

### PND9

**COST-EFFECTIVENESS OF PREGABALIN IN PATIENTS WITH FIBROMYALGIA: A US PERSPECTIVE**

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**OBJECTIVE:** To assess the cost-effectiveness of pregabalin in the treatment of fibromyalgia (FM) from a US perspective.

**METHODS:** We developed a micro-simulation model to assess the cost-effectiveness of pregabalin therapy (450 mg/d) in a hypothetical cohort of patients with moderate or worse pain due to FM. The model simulates pain experience on a weekly basis over 14 weeks, using data from a randomized, placebo-controlled clinical trial. Pain levels were estimated using an 11-point numeric rating scale; moderate or worse pain was assumed to be a pain score ≥4. Health-state utilities were assigned based on estimated pain level, using published values for the Health Utilities Index [HUI]—Mark II. Costs of drug therapy only were considered. Cost-effectiveness of pregabalin therapy was considered alternatively versus placebo and no therapy, the latter because pregabalin is the only drug currently indicated for the treatment of FM. Cost-effectiveness was expressed in terms of both incremental cost per additional day without moderate or worse pain and incremental cost per quality-adjusted life-year (QALY) gained. RESULTS: In comparison with no treatment, pregabalin therapy was estimated to yield an average of 29.4 additional days without moderate or worse pain over 14 weeks, and a gain of 0.018 QALYs. Corresponding estimates for the comparison with placebo were 11.4 additional days without moderate or worse pain, and 0.009 additional QALYs. Assuming a daily cost of therapy of $3.30, the incremental cost (95% CI) of pregabalin therapy per additional day without moderate or worse pain was $11 ($9, $14) versus no treatment, and $32 ($18, $72) versus placebo. Corresponding estimates of the incremental cost per QALY gained were $39,266 ($27,167, $57,269) and $17,220 ($15,289, $20,153), respectively. CONCLUSION: In patients with moderate or worse pain due to FM, the cost-effectiveness of pregabalin falls within accepted published thresholds.

### PND10

**SWITCHING TO HIGH-DOSE HIGH-FREQUENCY INTERFERONS OR NATALIZUMAB IN PATIENTS WITH MULTIPLE SCLEROSIS: A COST-EFFECTIVENESS ANALYSIS**

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**OBJECTIVE:** Studies in patients with multiple sclerosis (MS) have shown that disease-modifying drugs (DMDs) lower the frequency and severity of relapses and slow disease progression. The clinical and economic consequences of regimens involving switches between DMDs have not been studied fully. The following analysis sought to examine clinical and economic outcomes in MS patients who switch from one of the two leading DMDs in the United States (IFNβ-1a intramuscular [IM] and glatiramer acetate [GA]) to a high-dose high-frequency (HDHF) interferon beta (IFNβ-1b subcutaneous [SC], IFNβ-1a SC) or natalizumab, a second-line agent. METHODS: A previously published pharmacoeconomic model was modified to evaluate switching scenarios and estimate total cost of MS care and the number of relapses avoided over a four year period. The model assumes that switches from the first agent occurred at the end of the first year and that the second agent is continued through the end of the four year period. Clinical data inputs were derived from Class I clinical trials. The costs of relapses and disability steps were based on published literature, and drug prices were obtained from the Red Book. Relative cost-effectiveness between switching scenarios was compared by calculating the cost per relapse avoided over the four year time frame. RESULTS: The cost of avoiding one relapse in patients switching from IFNβ-1a IM to IFNβ-1a SC or IFNβ-1b SC was $84,401 and $87,090, respectively. The most costly switch was from IFNβ-1a IM to natalizumab ($104,568 per relapse avoided). Switching from GA to IFNβ-1a SC, IFNβ-1b SC, or natalizumab resulted in costs per relapse avoided of $70,822, $73,511, and $90,989, respectively. CONCLUSION: This analysis suggests that MS patients switched from IFNβ-1a IM or GA to an HDHF IFNβ benefited from the lowest cost to avoid a relapse.

### PND11

**TRIPTANS FOR ACUTE MIGRAINE: A SYSTEMATIC REVIEW OF COST-EFFECTIVENESS STUDIES**

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**OBJECTIVE:** Triptans (almotriptan, eletriptan, naratriptan, rizatRIPTAN, sumatriptan, and zolmitriptan) have become the preferred migraine therapy in Canada and elsewhere. Currently, health care decision makers are considering developing a consistent listing policy for triptans in publicly-funded drug plans across Canada. Compelling evidence on cost-effectiveness of triptans applicable to Canadian health care setting is important in aiding decision-making process. This study examines the validity and applicability of available evidence of cost-effectiveness studies of triptans to the Canadian health care system.

**METHODS:** Cost-effectiveness studies were obtained by searching PubMed and the Cochrane Library and cross-searching BIOSIS Previews®, EMBASE®, and MEDLINE® databases on the OVID® search system. A Systematic review was performed on selected studies. The validity of evidence was assessed by appraising each study with regards to inclusion of all triptans; major costs and benefits in the model; resource use in the model; and use of credible clinical data. RESULTS: Twelve relevant studies were identified and reviewed. Of them, two considered major cost and benefits and resources use but compared only a few triptans and used unreliable clinical data; eight studies considered only drug cost with only two out of eight studies compared all triptans using unreliable clinical data; and two studies considered resource use and major costs/benefits, compared only a few triptans, and used unreliable clinical data. CONCLUSION: Available studies on cost-effectiveness of triptans are of limited utility to Canadian decision markers as they harbour flaws such as failure to compare all triptans, adoption of less credible clinical estimates, exclusion of major costs/benefits, and failure to...
model resources use. A reliable clinical and primary cost-effectiveness study is warranted to take into account Canadian publicly-funded health care system.

**PND12**

**COST-EFFECTIVENESS ASSESSMENT OF ANTI-EPILEPTIC DRUGS AS ADJUVANT TREATMENTS FOR THE MANAGEMENT OF REFRACTORY PARTIAL SEIZURES IN ADULT MEXICAN PATIENTS**

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**OBJECTIVE:** Epilepsy represents a national health problem. In Mexico there are between 1.2 and 2.2 million diagnosed patients who raise the demand for health care services. The aim of this study was to analyze which antiepileptic drug is a cost-effective therapy as an adjuvant treatment for the management of refractory partial seizures using a health care payer’s perspective.

**METHODS:** A three-stage Markov model was used with a follow-up period of one-year (4 cycles). Effectiveness measures were the percentage of patients under control (no seizures) and the number of hospitalizations avoided. The transition probabilities were obtained from national and international published literature. Comparators used in the assessment were topiramate (300–800 mg/day), levetiracetam (2000–3000 mg/day), gabapentin (1200–1800 mg/day), lamotrigine (75–400 mg/day), vigabatrin (1000–3000 mg/day) and pregabalin (150–600 mg/day).

Estimation of resource use was performed employing hospital records from hospitals of the Social Security Mexican Institute (IMSS). They include days of hospitalization, emergency, outpatient services and drugs costs. The model was calibrated and probabilistic sensitivity analyses were conducted using bootstrapping techniques.

**RESULTS:** The highest rate of controlled-patients was for pregabalin (54.1%; CI95% 53.3–55.1%) followed by topiramate (42.2%; CI95% 41.5–43.1%), levetiracetam (34.1%; CI95% 33.4–34.8%), gabapentin (32.6%; CI95% 32.0–33.4%), vigabatrin (27.4%; CI95% 26.9–28.1%) and lamotrigine (24.7%; CI95% 24.1–25.3%). The annual expected mean cost per patient resulted in US$3136.4 (CI95% US$3076.2–US$3193.8) for pregabalin; US$4295.9 (CI95% US$4269.8–US$4318.3) for topiramate; US$4037.7 (CI95% US$4015.6–US$4059.8) for levetiracetam; US$3470.9 (CI95% US$3450.1–US$3493.3) for vigabatrin; US$3581.6 (CI95% US$3523.3–US$3615.8) for gabapentin; and US$2807.2 (CI95% US$2789.1–US$2825.4) for lamotrigine.

The ICER’s of the alternatives choosing gabapentin as the gold standard were –US$1,769 (CI95% –US$1,685.3–US$1,812.8) for pregabalin, US$4,826.5 (CI95% US$4,143.7–US$4,895.8) for topiramate; US$6,807.9 (CI95% US$5,821.4–US$6,986.7) for levetiracetam; –US$2,127.9 (CI95% –US$2,381.8–US$1,561.2) for vigabatrin and US$28,681.6 (CI95% US$28,569.1–US$28,547.0) for lamotrigine. Acceptability curves and component analyses showed that these results remain robust. **CONCLUSION:** Pregabalin demonstrated to be a cost-saving and cost-effectiveness adjuvant therapy in the management of refractory partial seizures in Mexican patients.

**PND13**

**A COST-EFFECTIVENESS ANALYSIS OF NATALIZUMAB VS. INTERFERON-BETA AND GLATIRAMER ACETATE IN PATIENTS WITH ACTIVE RELAPSING-REMITTING MULTIPLE SCLEROSIS CURRENTLY FAILING ON EXISTING THERAPY**

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**OBJECTIVE:** Natalizumab is a new disease modifying therapy currently licensed for use in patients with relapsing-remitting multiple sclerosis (RRMS), and has recently been the subject of a cost-effectiveness evaluation by the National Institute for Health and Clinical Excellence (NICE) in the UK. NICE accepted that natalizumab was cost-effective in a highly-active subgroup of RRMS patients, but not in all patients failing on current therapy (sub-optimal therapy, SOT patients). In the SOT patients, the basecase ICERs exceeded £43,400 and NICE essentially concluded that natalizumab would not be a cost-effective use of NHS resources in these patients unless they were having two or more relapses per year. However, NICE recognised that the evaluation may have underestimated the incremental QALY in two areas. The first was that the relapse disutility was underestimated, and the second was that the time horizon of the evaluation was too short. Here we re-evaluated the ICERs for natalizumab vs. interferon-beta and glatiramer acetate in SOT patients taking into account the points raised by NICE.

**METHODS:** The original model submitted to NICE was a 20-year markov-model parameterised for the UK from a direct health care perspective. Disutilities for relapse were updated using values from a previous UK Health Technology Assessment, and the cost of relapse was changed in line with contemporary studies. The time-horizon for the model was extended from 20 years to 30 years.

**RESULTS:** The ICER from a direct medical costs perspective for natalizumab vs. interferon-beta was £29,900 per QALY. For natalizumab vs. glatiramer acetate the ICER was £29,300 per QALY. Conclusions: The European Medicines Evaluation Agency has approved natalizumab for use in highly active RRMS, including SOT patients. Given the willingness-to-pay threshold of £30,000 per QALY commonly associated with NICE guidance, the results here show that natalizumab is a cost-effective treatment for all patients failing on current therapy in the UK.

**PND14**

**ECONOMIC EVALUATION OF SATIVEX® FOR TREATMENT OF NEUROPATHIC PAIN IN PATIENTS WITH MULTIPLE SCLEROSIS**

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**OBJECTIVE:** To determine the incremental cost-utility ratio (ICUR) of Sativex®, a novel, cannabis-based therapy, as adjunctive treatment for neuropathic pain in MS adults from a Canadian provincial government payer perspective over a one-year time horizon. **METHODS:** Efficacy and safety of Sativex® were extracted from the pivotal phase III trial comparing Sativex®+standard analgesic care (SAC) to SAC alone. Direct medical resources (medication, health professionals, lab and diagnostic) were taken from a burden of illness study. Sativex® utilization for the economic analysis was based on the utilization in the pivotal study (# sprays per day). Costs (2006 CND$) were based on provincial sources. Utilities were based on a mapping exercise whereby pain severity (8S-11) from the pivotal trial was mapped onto Health Utilities Index Mark 3 (HUI) pain attribute.