and secondary analysis, respectively. Extensive sensitivity analyses indicated that results were robust. The most influential number of relapses avoided for the overall study population was the number of relapses avoided after 3 years. The effectiveness of interferon beta-1a was estimated to be 0.74 per patient per 2 years. The average cost-effectiveness of 44 mcg scIFNβ-1a was estimated to be $107,861 per relapse avoided for the EDSS 3.5–5.0 cohort. The average cost-effectiveness for the overall study population was estimated to be $181,208 per relapse avoided. Sensitivity analyses performed in this study showed that results were robust to changes in key input parameters such as DMD costs, the number of relapses in untreated patients, the relative risk reduction in clinical relapse rates, the rate of adherence, and the average cost of adverse events.

**CONCLUSIONS:** Based on model results, the average cost-effectiveness of 44 mcg scIFNβ-1a was favorable for both the overall study population and the EDSS 3.5–5.0 cohort.

PND4 A COST-UTILITY ANALYSIS OF SARCAL ANTERIOR ROOT STIMULATION (SARS) COMPARED TO MEDICAL TREATMENT IN COMPLETE SPINAL CORD INJURED PATIENTS WITH A NEUROLOGICAL BLADER

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**OBJECTIVES:** To estimate the cost-utility of sacral anterior root stimulation (SARS, using the Finetech-Brindley device) compared to medical treatment (anticholinergics + catherization) in complete spinal cord injured patients with a neurological bladder.

**METHODS:** A probabilistic Markov model was elaborated with a 10-year time horizon, one-year cycles and a 2.5% discount rate. Three irreversible states were defined: 1) treatment without urinary complication, 2) surgery for urinary complication (spincterotomy, urinary derivation); 3) death. Reversible states (urinary calculus; Finetech-Brindley device failures) were included in the two first irreversible states. Decision analytic review and simulation were performed to estimate transition probabilities and Quality Adjusted Life Years (QALYs). In the perspective of the French Healthcare System, costs were estimated from a published comparative cost-effectiveness research in France for 2014, 73,600€, and through simulations using the 2013 French prospective payment system (PMSI) classification.

**RESULTS:** In the primary analysis, the cost-utility ratio was 10,647/QALY gained. At a 30,000€ ceiling ratio, the probability of SARS being cost-effective compared to medical treatment was 63%. If the French Healthcare System reimbursed SARS for 200 patients/year, the two first years and 50 patients/year during 8 years (anticipated target population) the expected incremental net health benefit would be 222 QALYs, and the expected value of perfect information (EVPI) would be 4,570,000€. The highest partial EVPI is reached for transition probabilities toward urinary calculus (4,420,000€).

With discount rates of 1% and 6% the cost-utility ratios were 6,951 and 19,770/QALY gained, while the probability of SARS being cost-effective were 46% and 58%, respectively.

**CONCLUSIONS:** Our model shows that SARS using Finetech-Brindley device offers the most important benefit and should be considered cost-effective at a 30,000€ ceiling ratio. Despite a high uncertainty, EVPI and partial EVPI may indicate that further research would not be profitable to inform decision making.

PND5 A COMPARISON OF A MARKOV COHORT MODEL AND A DISCRETE-EVENT SIMULATION FOR ECONOMIC ANALYSES OF TREATMENTS FOR MULTIPLE SCLEROSIS

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**Multiple sclerosis (MS) is a disease with lifelong impact, making the cost-effectiveness (CE) of its treatments particularly sensitive to assumptions embedded in the structural assumptions of the model, but it is not designed to investigate sensitivity to structural assumptions. The aim of this study was to compare a Markov cohort model (MM) and a discrete-event simulation (DES) model that were based on common clinical parameters: population (sphincterotomy, urinary derivation); 3) death. Reversible states (urinary calculus; Finetech-Brindley device failures) were included in the two first irreversible states. Decision analytic review and simulation were performed to estimate transition probabilities and Quality Adjusted Life Years (QALYs). In the perspective of the French Healthcare System, costs were estimated from a published comparative cost-effectiveness research in France for 2014, 73,600€, and through simulations using the 2013 French prospective payment system (PMSI) classification.

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**CONCLUSIONS:** Our model shows that SARS using Finetech-Brindley device offers the most important benefit and should be considered cost-effective at a 30,000€ ceiling ratio. Despite a high uncertainty, EVPI and partial EVPI may indicate that further research would not be profitable to inform decision making.

PND7 A COST-UTILITY ANALYSIS OF SARCAL ANTERIOR ROOT STIMULATION (SARS) COMPARED TO MEDICAL TREATMENT IN COMPLETE SPINAL CORD INJURED PATIENTS WITH A NEUROLOGICAL BLADER

Ferreira A1, Morinete C1, Verpillot E2, Donon L1, Salimi LR1, Joseph P1, Vignes J1

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**OBJECTIVES:** To estimate the cost-utility of sacral anterior root stimulation (SARS, using the Finetech-Brindley device) compared to medical treatment (anticholinergics + catherization) in complete spinal cord injured patients with a neurological bladder.

**METHODS:** A probabilistic Markov model was elaborated with a 10-year time horizon, one-year cycles and a 2.5% discount rate. Three irreversible states were defined: 1) treatment without urinary complication, 2) surgery for urinary complication (spincterotomy, urinary derivation); 3) death. Reversible states (urinary calculus; Finetech-Brindley device failures) were included in the two first irreversible states. Decision analytic review and simulation were performed to estimate transition probabilities and Quality Adjusted Life Years (QALYs). In the perspective of the French Healthcare System, costs were estimated from a published comparative cost-effectiveness research in France for 2014, 73,600€, and through simulations using the 2013 French prospective payment system (PMSI) classification.

**RESULTS:** In the primary analysis, the cost-utility ratio was 10,647/QALY gained. At a 30,000€ ceiling ratio, the probability of SARS being cost-effective compared to medical treatment was 63%. If the French Healthcare System reimbursed SARS for 200 patients/year, the two first years and 50 patients/year during 8 years (anticipated target population) the expected incremental net health benefit would be 222 QALYs, and the expected value of perfect information (EVPI) would be 4,570,000€. The highest partial EVPI is reached for transition probabilities toward urinary calculus (4,420,000€).

With discount rates of 1% and 6% the cost-utility ratios were 6,951 and 19,770/QALY gained, while the probability of SARS being cost-effective were 46% and 58%, respectively.

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