

### (S17) Comparison of Lithotripsy Rates in Veterans With and Without MS

**Objective:** Establish the proportion of lithotripsy or other active renal stone treatment in individuals with multiple sclerosis (MS) compared with individuals without MS or spinal cord injury over a 7-year period in one health care setting.

**Design/Setting:** A cross-sectional analysis of data collected prospectively and analyzed retrospectively from a tertiary veterans hospital. **Participants:** All veterans without a diagnosis of spinal cord injury who were seen at one veterans hospital between 1999 and 2005. **Main Outcome Measures:** Proportion of individuals with MS compared with those without MS requiring active intervention for renal stones, including lithotripsy, cystourethroscopy, or percutaneous nephrostolithotomy. **Results:** There were 148,710 veterans without MS and 551 with MS seen over this period. There was a 1.1% proportion of active intervention in the MS population from 1999 to 2005. This compares to a 0.15% proportion of intervention in the population without MS over the same time frame. The proportion of male veterans with MS (84.0%) was similar to that in the non-MS population (81.5%). Mean age at time of procedure was 58 years (median 56 years) for those with MS and 53 years (median 52 years) for those without MS. **Conclusions:** Our results suggested that in a predominantly male population of individuals using a tertiary veterans hospital, there was an average annual proportion of lithotripsy or other active intervention of 1.1% in those with MS and 0.15% in those without MS. Both groups required a relatively low rate of intervention. The difference in rates was not statistically significant. If these results are confirmed by additional work, they may help with formulation of guidelines for diagnostic screening for renal stones in individuals with MS seeing noneurologic specialists.

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### (S18) Medication Nonadherence and Its Impact Among Patients With MS

**Objective:** Estimate adherence to disease-modifying agents and association of adherence to patient characteristics, disease progression, and quality of life among patients with relapsing-remitting multiple sclerosis (RRMS). **Background:** MS is a demyelinating disease of the central nervous system that may cause severe disability in young adults. In the United States, agents used for RRMS (ie, interferon beta [Avonex, Rebif, and Betaseron] and glatiramer acetate [Copaxone]) have been shown to reduce relapse rate, magnetic resonance imaging lesion burden, and short-term disability. Non-adherence to therapy may reduce the effectiveness of these agents and affect quality of life and progression of disease. **Design/Methods:** The study population consisted of 252 health maintenance organization-insured patients with RRMS over 2 study years (2004–2006). Adherence to injectable medication was measured by the proportion of days the patient had an injectable medication on hand per prescription drug claims data. Other constructions to measure adherence are being explored. To determine relapse rates and

quality of life, medical chart abstraction and patient surveys, respectively, were used. **Results:** Among patients with RRMS (78% female, 40% African American), 62.7% were dispensed a disease-modifying drug. Among those with two or more dispensings, mean adherence was 84% (95% confidence interval [CI] 81, 87%), with 72% adherent (using 80% cut point). Adherence was associated with white race (80% vs 62% adherent;  $P < .05$ ), increased age (46.7 vs 42.9 years;  $P < .05$ ), and higher income. The response rate for patient surveys was 76%. Among survey participants, the proportion of adhere patients was 92%. Data from the medical record and patient survey are being used to estimate the association of adherence/nonadherence and disease progression and quality of life. **Conclusion:** Adherence to disease-modifying agents is high among patients with RRMS, with differences in socioeconomic factors that warrant further investigation.

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### (S19) Health Care Utilization Over 2000–2005 Among Insured Patients With MS

**Objectives:** Published estimates of health care utilization in multiple sclerosis (MS) rely on data that may be more than a decade old. We investigated more recent health care utilization by MS patients that has occurred since the introduction of disease-modifying therapies (DMTs). **Methods:** We identified MS patients in a commercial administrative claims database that spanned May 2000 through July 2005 using ICD-9 codes. It was HIPAA-compliant and contained integrated inpatient, outpatient, and pharmacy records on >12 million covered lives per year from all major US regions. Data for subjects with continuous data for  $\geq 1$  year were analyzed with descriptive statistics. **Results:** Seventy-eight percent of subjects were female, and 84% were ages 30–60 years (mean 46 years). Significant comorbidity was common. Fifty-five percent of subjects used at least one DMT, with Avonex being most common (32%), followed by Copaxone (13.4%), Betaseron (6.5%), Rebif (5.6%), and Novantrone (1.6%). In a given year, 3.9% of subjects used two DMTs, and 0.2% used three or more. Subjects who took DMTs were more likely to use medications for symptom relief than those who did not: 41% used medication for depression, 42% for spasticity, 22% for fatigue, and 14% for bladder problems. The mean (standard deviation) number of visits per year was 9.1 (7.5); 4.1 (4.9) were MS related. Annual mean hospitalization was 1.6 days; 12.4% of subjects were hospitalized during the study period. For 62% of hospitalizations, MS was the first or second diagnosis coded: 5.7% of patients had emergency department admissions (37% condition related); 2.4% had intensive care unit visits (50% condition related); and 1.9% had skilled nursing facility admissions (63% condition related). **Conclusions:** Despite the introduction of DMTs, many patients with MS still require intensive medical care, including frequent outpatient visits and hospital stays. Novel treatments for MS may reduce this burden in the future.

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