patients who began treatment with either olanzapine or risperidone were included. Treatment course and associated schizophrenia-related, mental health care and total health care costs during the subsequent 12-month period were examined using univariate and multivariate methods. RESULTS: Nine hundred eighty-five (985) patients initiated on risperidone and 348 initiated on olanzapine met inclusion criteria. The mean dose was 4.02 and 10.49 for risperidone and olanzapine patients, respectively. Patients taking olanzapine versus risperidone stayed on therapy longer during the 12-month observation period (217 days versus 181 days, p < 0.0001). Although pharmaceutical costs were significantly higher for olanzapine patients, their medical costs were significantly lower than those on risperidone. After adjusting for differences in patient demographics, disease severity and comorbidities, olanzapine patients had significantly lower mental health care costs including drug costs ($1,827 less, p < 0.05) and lower total health care costs ($1,834 less, p < 0.05). The schizophrenia-related costs (including drug costs) were not statistically significantly different, though numerically the risperidone patients incurred $740 more per patient than patients on olanzapine (p = 0.26). CONCLUSIONS: The findings in this study suggest that the initial selection of atypical antipsychotic for the treatment of schizophrenia matters, as olanzapine offset its acquisition cost by reducing medical costs and demonstrated significant mental and total health care cost savings over risperidone.

USE OF RASCH MODELS FOR VALIDATION OF INSTRUMENTS USED IN MENTAL HEALTH EVALUATION

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OBJECTIVES: The Positive And Negative Syndrome Scale (PANSS) and Calgary Depression Scale for Schizophrenics (CDSS) are widely used in the evaluation of schizophrenia. Their internal validity have already been evaluated with classical methods (multitrait and confirmatory analyses). During the last two decades, Item Response Theory has been developed to deal with latent traits. As part of it, Rasch models are commonly used in Quality of Life research but not yet for other outcome questionnaires. METHODS: 458 schizophrenic patients were evaluated with the PANSS and CDSS. Rasch models for polytomous items were fitted to the data in order to assess: 1) unidimensionality of the CDSS and the PANSS subscales, i.e. their ability to measure one latent trait (degree of depression/degree of positive, negative, general schizophrenic symptoms); infit and outfit statistics were used and residuals studied; 2) invariance of comparisons, implying that the parameter characterizing an item does not depend on the latent trait distribution of the population; item parameters estimates were compared for two subgroups of the population. RESULTS: Unidimensionality and invariance of comparisons are globally satisfactory for the CDSS, although the appropriateness of two items (items four and seven) may be questionable. Results do not support the three-dimensional structure for the PANSS, which is commonly used as the reference. CONCLUSIONS: Further investigation of the factorial structure of PANSS (e.g five-factors structures, which have been proposed by several authors) is necessary. Rasch models provide a powerful approach to evaluate internal validity of mental health scales, enabling to investigate invariance of comparisons, which constitutes the major distinction from classical methods.

TYPICAL AND ATYPICAL ANTIPSYCHOTICS IN THE TREATMENT OF SCHIZOPHRENIA: ASSESSMENT OF CLINICAL AND ECONOMIC OUTCOMES USING A MARKOV MODEL

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OBJECTIVES: Health economic assessment of cost-effectiveness parameters for the comparison of typical (Haloperidol), partially atypical depot (Flupentixol) and atypical neuroleptics (Olanzapin, Risperidon) in the treatment of schizophrenia from the perspective of German health insurance. METHODS: A published markov model was rebuilt and calibrated with DATA®, taking into consideration relapse rates, extrapyramidal symptoms (EPS) and other prognostic symptoms. All data were derived from published sources where available. Besides the comparison of monotherapy, a stepwise treatment scenario was simulated, starting with three months Olanzapin treatment followed by Flupentixol. Over the 5-year simulation period cumulated complication rates (percentage of relapse, positive and negative symptoms), patient related outcomes (Brief Psychiatric Rating Score “BPRS”) and cost parameters (medication, EPS-cost and total costs) were assessed. A cost-effectiveness analysis was performed. RESULTS: Olanzapin/Flupentixol in combination had the lowest relapse rate (42.9 %), followed by Flupentixol (44.4%), Olanzapin (44.8%), Risperidon (48.0 %) and Haloperidol (57.6%). Olanzapin treatment showed the highest BPRS score (3.13), followed by Risperidon (3.07), Olanzapin/Flupentixol (2.52), Flupentixol (2.42) and Haloperidol (2.37). The most cost-effectiveness treatment measured by cost in DEM per relapse free patient was Olanzapin/Flupentixol (200,000), followed by Olanzapin (211,000), Flupentixol (212,000), Risperidon (231,000) and Haloperidol (287,000). The best cost-effectiveness (expressed in DEM/BPRS) was observed in Olanzapin (37,100), followed by Risperidon (39,100), Olanzapin/Flupentixol (45,500), Flupentixol (48,600) and Haloperidol (51,400). Total 5-year drug cost (DEM)
were 24,600, 26,800, 3,800, 2,700 and 3,210 respectively. CONCLUSIONS: In terms of relapse rates Olanzapin and Flupentixol lead to better clinical outcome and better cost-effectiveness results as compared to alternative typical or atypical neuroleptic therapy. With Olanzapin and Risperidon most favorable BPRS scores were achieved. Flupentixol depot as monotherapy or following initial Olanzapin treatment is a cost-effective alternative to atypical neuroleptics at low drug cost and low relapse rates.

**PMH18**

HEALTH CARE UTILIZATION IN PATIENTS WITH TREATMENT RESISTANT DEPRESSION

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OBJECTIVES: Approximately one-half of patients with an episode of major depression will have a recurrent episode during their lifetime. Recent studies indicate that approximately 20% of depressed patients are resistant to traditional antidepressant treatments. This study utilizes medical and prescription claims data from the 1995–1998 MarketScan® Databases to profile the characteristics and health care utilization of patients with treatment-resistant depression. METHODS: Depression-diagnosed patients with adequate antidepressant dosing and treatment duration are selected. Patients are classified as treatment-resistant if they have switched/augmented their initial medication with other antidepressants twice, or if they have switched/augmented their initial medication and have claims for depression-related hospitalizations or suicide attempts. Depression-diagnosed patients meeting selection criteria but not classified as treatment-resistant by the above criteria are used as a comparison group. RESULTS: Patients with treatment-resistant depression are at least twice as likely to be diagnosed with bipolar disorder, at least 1.5 times as likely to be diagnosed with comorbid anxiety disorders, and at least 1.5 times as likely to be diagnosed with substance-related disorders than the comparison group (p-values <0.01). Patients with treatment-resistant depression have 30% higher mean number of psychiatric diagnostic groupings (PDG) and 9% higher mean number of major diagnostic categories (MDC) than the comparison group (p-values <0.01). Furthermore, patients with treatment-resistant depression are at least twice as likely to be hospitalized (depression and non-depression related), and have 41% more outpatient visits than the comparison group (p-values <0.01). Finally, patients with treatment-resistant depression use 2 to 3 times more psychotropic medications (in addition to antidepressants) than the comparison group (p-values <0.01). CONCLUSIONS: Treatment-resistant patients are higher utilizers of both depression-related and general medical services. This finding underscores the importance of early identification and effective treatment of treatment-resistant patients to prevent future depressive episodes and to mitigate health care utilization.

**PMH19**

RISK OF HOSPITALIZATION FOR PATIENTS WITH BIPOLAR DISORDER

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OBJECTIVES: Health care utilization for patients with bipolar disorder has received limited attention. This study utilizes medical and prescription claims data from the 1998 to mid-2000 MarketScan Databases to examine the risks of hospitalization, a major cost driver in treating bipolar patients. Hospitalizations are associated with a relapse of bipolar symptoms (often due to treatment ineffectiveness or discontinuation). METHODS: Bipolar patients are identified using diagnosis codes and prescription drug claims. An ‘intent-to-treat’ framework for classifying drug cohorts by initial bipolar prescription is used. Prescription claims are studied over a minimum of a six-month time period to analyze drug use patterns (e.g., switching and augmenting treatment). Descriptive profiles of the bipolar patients are presented. Cox proportional hazard models are used to examine the relationships among observable patient characteristics, drug choice, drug use patterns, and hospitalizations. This method accounts for the potential bias in parameter estimates due to data censoring. RESULTS: Among patients with at least 6-months of follow-up data (n = 6,536), the mean age is 43 years old and 63.3% are female. The majority of patients are initially observed on antimanic medications, with lesser percentages on other common pharmacological therapies (typical and atypical antipsychotics, and antidepressants). During the 6-month follow-up, 14.5% of patients have at least one hospitalization and 7.2% have at least one bipolar-related hospitalization. During a 12-month follow-up, 23.3% have at least one hospitalization of any type and 11.5% have at least one bipolar-related hospitalization. The unadjusted risk of hospitalization increases over time, at a decreasing rate. CONCLUSION: The high incidence of hospitalization demonstrates the need for effective treatment options. This study also illustrates the importance of accounting for censored data to obtain unbiased estimates of factors associated with the risk of hospitalization.

**PMH20**

DOsing of benzodiazepine hypnotics in elderly patients

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OBJECTIVES: Use of benzodiazepines in elderly patients has been associated with adverse outcomes including mo-