PMH15
RISK OF HYPOTANDEMIA AMONG THE INCIDENT USERS OF ANTIDEPRESSANTS
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OBJECTIVES: Newer antidepressants selective serotonin reuptake inhibitors (SSRIs) and serotonin norepinephrine reuptake inhibitors (SNRIs) are the most commonly prescribed antidepressants. This is due mostly to their better side effect profile when compared to older drugs like tricyclic antidepressants (TCAs). However, these choices are not completely bereft of side effects. Hypotanemiation is a condition, in which the serum sodium level falls below normal, it has been proposed this occurrence is associated with the binding affinity to the 5-HT receptor. The objective of our study is to compare the incidence of hypotanemiation among the newer classes of antidepressants. We used a cohort design to link death certificate claims data to compare the incidence of hypotanemiation in TCAs, SSRIs, and SNRIs.

Incidence was reported per 10,000 person-years. Cox model was used to assess the risk of hypotanemiation for each antidepressant while adjusting for a 10-year shorter gap period. A total of 314,796 patients with an incident prescription for a TCA, SSRIs, or SNRIs were identified and met study inclusion criteria. The unadjusted hazard ratio for hypotanemia in patients on SSRIs was 0.75 (C.I 0.70-0.85) and on SNRIs was 1.112 (C.I 0.976-1.268) when compared to TCAs. However, after adjusting for covariates using the Cox model the hazard ratios were found to be: 1.031 (C.I 0.934-1.099) for SSRIs and 1.069 (C.I 0.937-1.221) for SNRIs again compared to TCAs. After doing stepwise regression to remove covariates that did not have significant effect the results remained similar, 1.017 (C.I 0.931-1.101) for SSRIs and 1.047 (C.I 1.041-1.225) for SNRIs.

CONCLUSIONS: No significant increase in the risk of hypotanemiation for SSRIs or SNRIs over TCAs was found. The covariates we identified show significant interaction with hypotanemia. However, the results must be interpreted cautiously.

PMH16
PREVALENCE OF ANTICHOLINERGIC MEDICATION USE AMONG ELDERLY NURSING HOME RESIDENTS WITH DEPRESSION
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OBJECTIVES: Anticholinergic medications are extensively used in nursing homes. However, limited data exists regarding the utilization pattern of anticholinergic medications among residents with depression. This current study evaluated the extent of anticholinergic medication use in elderly nursing home residents with depression.

METHODS: A retrospective cross-sectional study was conducted using 2007-2008 Medicare data from all US states. The study sample consisted of nursing home residents aged 65 years or older, who had depression. Patients with full coverage for Medicare Parts A, B and D and no HMO coverage for the entire study period were included. The dependent variable was depression, and the independent variable was receipt of anticholinergic medications.

Anticholinergic medications were identified using the Anticholinergic Drug Scale (ADS), which classifies drugs into four categories based on their level of anticholinergic activity. Descriptive statistics were performed to determine the prevalence patterns of anticholinergic medication use in elderly residents with depression. RESULTS: The study included 833,453 elderly residents with depression, of whom 798,880 used anticholinergic medications for an overall prevalence of 95.9%. The highest prevalence of anticholinergics was seen in those with level 1 anticholinergics (92.83%), followed by level 3 (65.43%) and level 2 drugs (27.24%). Nearly 62% of the residents used medications with significant anticholinergic properties (level 2 or 3). Among the level 2 anticholinergics, the most frequently prescribed medications were: biperidene (20.94%), donepezil (18.37%), olanzapine (8.38%), clobenpropazine (4.49%), olotriene (2.55%) and darifenacine (2.14%). The most frequently prescribed level 3 anticholinergics were: paroxetine (13.08%), tolterodine (8.06%), oxybutynin (6.95%), olanzapine (6.67%), hydroxyzine (6.24%), medazoline (5.86%) and amitriptyline (3.86%). CONCLUSIONS: The study found that over 6 in 10 elderly nursing home residents with depression used medications with significant anticholinergic properties. In light of significant central and peripheral adverse effects of these agents, there is a need to optimize the use of anticholinergic medications among the elderly residents with depression.

PMH17
ANTIDEPRESSANT USE DURING PREGNANCY AND RISK OF AUTISM SPECTRUM DISORDER IN CHILDREN: A POPULATION-BASED COHORT STUDY
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OBJECTIVES: To our knowledge, four studies have attempted to investigate the association between gestational maternal use of antidepressant and risk of Autism Spectrum Disorder (ASD). However, several methodological drawbacks remain in these studies. We sought to assess the impact of gestational antidepressant use on the risk of (ASD) in children, controlling adequately for potential confounding factors.

METHODS: A large population-based cohort study including all singletons born from 1998 through 2009 was conducted using data from the Quebec Pregnancy Cohort. Antidepressant exposure during pregnancy was defined according to trimester of use and specific classes. Events were infants having diagnosis of ASD. Multivariable logistic regression within the conceptual framework of Anderson Competing Risks model was used to estimate incidence density rate ratio. RESULTS: Of the 23,235 patients meeting eligibility criteria, 5.4% (N=1,253) were on ASP and 94.6% (N=21,979) on MT during the study period. Among those on ASP, 70.1% used a combination of atypicals, 1.1% used a combination of typicals, 27.7% used a combination of a typical and an atypical, 0.8% used clozapine and an atypical, and 0.3% used clozapine and a typical. Among those on MT, 7% used typicals, 99.2% used atypicals, and 0.2% used clozapine. Patients with ASP had a mean of 106.6±42 (median=46, interquartile range [IQR]=146) days prior to pregnancy, whereas the median for patients on MT was 177.7 (median=118, IQR=108) days prior to pregnancy. Hosmer-Lemeshow model showed a 1.0±0.3 (median=1, IQR=0) ASP episodes per patient. When the overlap period for antipsychotics was increased from 60 to 120 and 180 days, the incidence of ASP fell from 5.4% to 2.7%. The risk of ASD was varied from 31 to 45 days, the incidence of APP changed from 5.4% to 2.2% and 1.3%, respectively. When the gap period was varied from 31 to 15 and 45 days, the incidence of APP changed from 5.4% to 6.4% and 9.6%, respectively. CONCLUSIONS: Although no clinical guidelines support ASP during pregnancy, a more comprehensive study would still be required to conduct a meta-analysis of the costs and harms associated with this practice.

PMH18
CHARACTERISTICS OF ELDERLY NURSING HOME RESIDENTS WITH DEPRESSION IN THE UNITED STATES
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OBJECTIVES: Depression is one of the most common disorders among the elderly nursing home residents. However, little is known about the demographic and behavioral characteristics of elderly nursing home residents with depression in the United States. METHODS: A national survey study was conducted in 2007-2008 Minimum Data Set (MDS) linked to Medicare enrollment file to identify residents 65 years or older with depression. Patients with full coverage for Medicare Parts A, B and D for the entire study period or until the date of death were included in the study. Descriptive statistics was performed to determine socio-demographic and behavioral characteristics of elderly nursing home residents with depression. RESULTS: The national study cohort consisted of 833,453 elderly nursing home residents with depression. Mean age of the residents was 81.09±8.23 years. Most of the patients were females (78.26%), whites (85.36%), widowed (49.66%) and had high school education (26.22%). The majority of the residents were diagnosed with depression (88.37%), dysthymia (7.87%), bipolar disorder (7.01%), major depressive episode (6.99%), congestive heart disease (61.34%), rheumatoid arthritis (58.86%) and congestive heart failure (55.22%). Antidepressants (68.09%) were the most commonly used drug class followed by nonsteroidal anti-inflammatory drugs (39.22%) and antibiotics (34.79%). Among the patients with assessments, the mean Index Of Seizure (Engel’s Scale) was 4.0 with 74% of the patients being IV. The mean Depression Rating Scale score (range 0-14) was 0.99 ± 1.59. The mean Aggressive Behavior Scale score (range 0-12) was 0.51 ± 1.27 in the study sample. CONCLUSIONS: Elderly nursing home residents with depression suffer from significant comorbidities. Most of these residents are managed by antidepressant pharmacotherapy. Further research is needed to address evidence gap regarding the safety and effectiveness of many medications used by the elderly nursing home residents.

PMH20
INAPPROPRIATE ANTICHOLINERGIC MEDICATION USE IN ELDERLY DEMENTIA PATIENTS
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OBJECTIVES: Anticholinergic medication use in elderly dementia patients is of great concern due to cognitive and central side-effects associated with these agents. Consequently, anticholinergic medications are considered inappropriate in elderly dementia patients. This study examined the prevalence and predictors of inappropriate anticholinergic medication use in elderly dementia patients using multi-year national data. This study involved a retrospective cross-sectional study design using 2009-2010 Medical Expenditure Panel Survey (MEPS). The study sample included patients aged ≥65 years diagnosed with dementia. Inappropriate anticholinergic medications were identified using the revised American Geriatrics Society (AGS) Beers’ criteria. Descriptive statistics using sampling weights were used to estimate the prevalence of inappropriate anticholinergic medication use. Multivariable logistic regression within the conceptual framework of Andersen Behavioral model was used to estimate the factors associated with inappropriate anticholinergic use in elderly dementia patients. RESULTS: According to the MEPS, a total of 3.78 million (95% CI: 3.17-4.38) elderly patients had dementia for an overall prevalence of 4.8%. An estimated 1.02 million dementia patients (95% CI: 0.70-1.3) reported use of inappropriate anticholinergic medications for a prevalence...
cohort study, with assessments of clinical outcomes every 6 months. Remission was defined as a mild or lower level on 8 key items of Positive And Negative Symptoms Scale (PANSS) - P1, P2, P3, N1, N4, N6, G5 and G9 - for at least 6 months. Symptomatic remission was described at each visit. Bivariate analyses were then conducted to compare groups in terms of symptoms severity, functioning, quality of life and economic burden. A repeated logistic model was finally used to identify risk factors associated with symptomatic remission.

RESULTS: The proportion of patients achieving symptomatic remission within 2 years was 26%. This outcome was found to be stable over time: 72% of patients achieving symptomatic remission at any visit remained in remission at the next visit. Significant differences were found between groups in terms of severity (p = 0.001), functioning (p < 0.0001), quality of life (p = 0.0001) and most of the resource use component (p < 0.0001). Factors associated with remission included baseline depression level (p = 0.005), baseline severity of symptoms (p = 0.001), baseline functioning (p = 0.0001), and compliance level (p = 0.0001). CONCLUSIONS: This research indicates that symptomatic patients in symptomatic remission presenting, better quality of life and lower resource use than other patients. Achieving symptomatic remission should be an important treatment goal in the treatment of schizophrenia.

Mental Health - Cost Studies

PMH24 ANALYSIS PERSPECTIVE FOR ASSESSING THE FINANCIAL IMPACT OF INTERVENTIONS USED IN RURAL/REMOTE SETTINGS – A CANADIAN CASE STUDY OF BUPRENORPHINE FOR TOXIC ALCOHOL POISONING

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OBJECTIVES: To assess the implications of conducting budget impact analyses from different perspectives when evaluating interventions used in remote/rural settings. Methods. Analysis of antitoxin for ethanol related toxic alcohol poisoning was assessed from perspectives of remote nursing stations and the health care system in Canada. METHODS: Literature searches were undertaken to obtain cost and health care resource use information. Experts from Health Canada, the provincial governments of BC, AB, MB, YT, and NWT were consulted to provide additional information and assist with interpretation and applicability of data. RESULTS: From the perspective of the remote nursing station, fomopizole appears to be a more costly treatment than ethanol. However, this perspective only takes into account drug costs, nursing costs and transportation costs. Remote nursing stations cannot effectively monitor ethanol levels to ensure correct dosing without access to labs – fomopizole does not require dose monitoring, potentially improving patient's health. Where transferred to tertiary care, continued treatment without lab monitoring may increase the likelihood of complications from ethanol treatment, or methanol or ethylene glycol poisoning, leading to downstream health care resource use at tertiary care facilities (need for ICU, increased LOS), as well as impacting patient quality of life. CONCLUSIONS: Fomopizole is a costly treatment that reduces the burden on staff and may lead to improved outcomes for patients in the tertiary care setting. However, given that rural remote nursing stations do not have to manage these treatments, fomopizole may not be considered cost-effective compared to other treatment options when only considering the short time frame the patient is in their care (until transfer to tertiary care). This study shows that the economic implications beyond the budget may be relevant and as such, an economic evaluation of fomopizole from a broader perspective would provide valuable information to the Canadian health care system.

PMH25 MEDICAI POPULATION BUDGET IMPACT ANALYSIS OF BUPRENORPHINE/NALOXONE FORMULATION

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OBJECTIVES: Buprenorphine/naloxone (BUP/NAL) for the treatment of opioid dependence combination is available in film (since September 2010) and tablet formulation. Earlier studies showed that treatment with BUP/NAL film formulation leads to an improved treatment persistence and lower health care costs compared to BUP/NAL tablet formulation. A budget impact analysis was built to assess the health care expenditures related to new patients entering treatment in scenarios characterized by different market shares of the two BUP/NAL formulations.

METHODS: A Markov model was structured tracking a cohort of patients initiating opioid dependence treatment with BUP/NAL film or BUP/NAL tablet formulation through successive phases of treatment: initiation, maintenance, discontinuation, off treatment and reinitiation. Transition probabilities and resource utilization were estimated from a Marketes Multi-State Medicaid database. The total health care cost expenditure over five years was predicted for 65.6 million members. (i.e. below following scenarios: 1) Initial market share for tablet formulation, 2) 100% market share BUP/NAL tablet formulation broken all between BUP/NAL tablet formulations currently available in the market. RESULTS: In the first year, for the overall population (100% on BUP/NAL film), costs of medication acquisition were found to be %1 ($18.1 million) lower. Costs of outpatient care were 71.65% ($10.1 million) higher. Nevertheless, this difference was outweighed by lower costs of inpatient care ($69.0 million) ($12.9 million), and emergency room ($7.96) ($18.3 million). Compared to BUP/NAL film, BUP/NAL tablet formulation cost savings are 4.2% and 9.4% lower in the first year and cumulatively over five years, respectively. CONCLUSIONS: Treatment with buprenorphine/naloxone film results in less health care resource utilization and lower total cost burden for Medicaid plans when compared to treatment with buprenorphine/naloxone tablet.

PMH22 PATTERN AND PREDICTORS OF AMBULATORY CARE VISITS FOR SUBSTANCE USE DISORDER IN ADOLESCENTS AND YOUNG ADULTS

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OBJECTIVES: To determine the pattern and predictors of ambulatory care visits for Substance Use Disorder (SUD) in adolescents and young adults. METHODS: A retrospective cross-sectional study was conducted using the 2008-2010 National Ambulatory Medical Care Survey (NAMCS) data. Annual visits for SUD were estimated using the ICD-9CM codes 303-305, descriptive statistics were performed on the weighted sample. Logistic regression was used to determine the predictors of SUD visits identified based on previous literature. Adolescents and young adults were defined as individuals 12-25 years of age. RESULTS: An estimated 23.45 million visits were conducted among 25-30 million adolescents and young adults. About 45.4% of visits were by adolescents and young adults. Majority of these visits were by male (65.2%), white (89.3%), and had comorbid anxiety (23.4%), or bipolar disorder (28.7%). The proportion of SUD related visit decreased by 5.3% (OR: 0.947, CI 0.939-0.955) with each year increase in age. Males had twice the odds of SUD visit than females [OR=2.193, CI 1.285-3.742]. No racial differences were found, although literacy of SUD visit was higher for SUD visit was lower for SUD visit than adult [OR=0.219, CI 0.129-0.615] in the West than in the Midwest. Literature suggests strong association between SUD and psychiatric comorbidities. The present study specifically found that comorbid anxiety or bipolar disorder increased the odds of SUD visits by 5.3% (OR: 0.947, CI 0.939-0.955). Significant associations were observed between SUD visits and psychiatric co-medications. Patients receiving prescription for Alpha-2 agonists and mood stabilizers had 10 [OR=10.122, CI 6.18-63.32] and 2 [OR=4.210, CI 1.085-16.625] times higher odds of SUD visits respectively while receiving anxiolytics had an opposite effect [OR=0.454, CI 0.208-0.989]. CONCLUSIONS: The findings of the study are in congruence with previous literature using adult samples. Study suggests early treatment of SUD in adolescents and young adults with high visit rates in patients with mood or anxiety disorders.

PMH23 DEPRESSIVE SYMPTOMS IN SCHIZOPHRENIA: EUROSC FINDINGS

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OBJECTIVES: Depressive symptoms are frequent clinical features in patients with schizophrenia. They contribute substantially to the burden of disease, and are associated with poor functioning, quality of life and economic burden. The aim of this study was to describe prevalence and key risk factors associated with depressive symptoms, using data from a longitudinal cohort study. METHODS: We used data from EuroSC, a multicenter 2-year cohort study conducted in France, England, Italy, Germany and Switzerland. Depression Scale for Schizophrenia (DS-18) was developed to assess the level of depressive symptoms in schizophrenia, was completed every 6 months, as well as other clinical outcomes (severity of symptoms, functioning, etc.) and quality of life. First, prevalence of depressive symptoms was described using several CDSS cut-offs. Correlations with other negative symptoms measures were also described. Then binary analyses were conducted to describe clinical outcomes and quality of life among patients with and without depressive symptoms. Finally, a repeated logistic model was implemented to identify key factors associated with depressive symptoms. RESULTS: Our sample consisted in 1208 patients with schizophrenia. The mean CDSS score at baseline was 0.93 (1.22). Prevalence of depressive symptoms ranged from 5% to 27.6% depending on CDSS cut-off used. Correlations with negative symptoms measures were all significant. Bivariate analyses suggested a higher clinical burden and a decreased quality of life for depressive patients. The multivariate model identified functioning, men- tal composite score of SF36 and non-compliance level as key factors associated with depressive symptoms. CONCLUSIONS: This study shows that depressive symptoms associated with the antipsychotics have a significant impact on clinical outcomes and quality of life, independently of the CDSS cut-off used. Key factors associated with depressive symptoms are functioning, quality of life and non-compliance.