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OBJECTIVES: Direct acting antiviral therapies (DAA) in addition to PEG 2a + RBV (PR) are a new therapeutic option with higher rates of sustained virological response (SVR) than dual therapy (PR) alone in chronic hepatitis C. Currently, two alternatives of DAA, telaprevir (TVR) and boceprevir (BOC), are available in Chile. The aim of this study was to evaluate the cost-effectiveness of adding TVR to PR in treatment naive and previously treated patients with HCV in Chile compared to PR alone and with the addition of BOC. **METHODS:** A lifetime Markov model was developed including HCV, cirrhosis, liver transplant and death as health states. QALYs as an outcome measure, a health care system perspective and a 6% discount rate for health benefits and costs have been used. Costs are expressed in local currency. A review of the literature to obtain epidemiologic and resources utilization data was performed and when data were not available or validation was needed a Delphi panel with local experts was carried out. Deterministic and probabilistic sensitivity analysis was performed. **RESULTS:** In comparison with PR, TVR avoided 174 cirrhosis cases and 16 deaths per 1,000 patients and shown an ICER of $14,730,736/QALY and $8,300,511/QALY for the naïve and for the previously treated patients respectively. TVR dominated BOC in naïve patients and in most of the previously treated ones (was less costly and more efficacious), except in the partial responders subgroup. Against the WHO criteria TVP versus PR presented 80% of probability of being cost effective for naïve and 96% of probability of being cost effective for previously treated patients. **CONCLUSIONS:** TVR dominated BOC and was cost-effective against WHO 3x GDP criteria in comparison to double therapy from the national health care system perspective in Chile.

PGI6

ECONOMIC EVALUATION OF DIRECT ACTING ANTIVIRAL (DAA) TREATMENTS FOR HEPATITIS C VIRUS (HCV) INFECTION IN PREVIOUSLY TREATED PATIENTS FROM THE PERUVIAN HEALTH CARE SYSTEM PERSPECTIVE

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OBJECTIVES: DAA treatments in addition to Ribavirin (RBV) and peginterferon (Peg-INF) (PR), provides the greatest opportunity to fully achieve sustained virological response (SVR) in HCV infected patients. Currently, two alternatives of DAA, telaprevir (TVR) and boceprevir (BOC), are available in Peru. The objective of this study is to assess: which is the most efficient DAA treatment to compliment the PR in previously treated patients. **METHODS:** A Markov model was used from the payer perspective to estimate costs and benefits throughout the whole life. Transition probabilities, utilities and resources usage were obtained from literature and through a mixed treatment comparison. Only direct costs were considered as medications, laboratory tests, complications costs and adverse events by using tariffs and tender prices from EsSalud. Outcomes were measured as SVR, quality adjusted life years (QALY) and events of cirrhosis per 1,000 treated patients. Two alternatives were assessed: 1) 12 weeks of TVR plus PR and 2) 24-44 weeks of BOC plus PR. Discount rate 3% and exchange rate (1 USD = 2,6 S/). **RESULTS:** 1) *Total costs (USD)*: TVR plus PR ($56,058), BOC plus PR ($64,536). 2) *Medication costs (USD)*: TVR plus PR ($47,297), BOC plus PR ($54,649). 3) *SVR*: TVR plus PR (76%), BOC plus PR (60%). 4) *QALY*: TVR plus PR (6,02), BOC plus PR (5,87). 5) *Cirrhosis per 1,000 treated patients*: TVR plus PR (311), BOC plus PR (363). Incremental Cost Effectiveness Ratio (ICER) was negative, showing that 12 weeks of TVR plus PR is a dominant therapy. **CONCLUSIONS:** When a DAA is considered, in addition to PR, for previously treated patients, TVR is the preferred choice because of its potential cost-savings versus BOC and incremental health benefits versus BOC.

PGI7

COST-EFFECTIVENESS OF TELAPREVIR IN GENOTYPE 1 CHRONIC HEPATITIS C VIRUS (HCV) INFECTION IN COLOMBIA

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OBJECTIVES: Direct acting antiviral therapies (DAA) in addition to PEG 2a + RBV (PR) are a new therapeutic option with higher rates of sustained virological response (SVR) than dual therapy (PR) alone in chronic hepatitis C (HCV). Currently, two alternatives of DAA, telaprevir (TVR) and boceprevir (BOC), are available in Colombia. The aim of this study was to evaluate the cost-effectiveness of adding TVR to PR in treatment naive and previously treated patients with HCV in Colombia compared to PR alone and with the addition of BOC. **METHODS:** A lifetime Markov model was developed including HCV, cirrhosis, liver transplant and death as health states. QALYs as an outcome measure, a health care system perspective and a 3% discount rate for health benefits and costs have been used. Costs are expressed in local currency. A review of the literature to obtain epidemiologic and resources utilization data was performed and when data were not available or validation was needed a Delphi panel with local experts was carried out. Deterministic and probabilistic sensitivity analysis was performed. **RESULTS:** In comparison with PR, TVR avoided 172 cirrhosis cases and 24 deaths per 1,000 patients and shown an ICER of $21,260,647/QALY and $8,461,107/QALY for the naïve and for the previously treated patients respectively. TVR dominated BOC in naïve patients and in most of the previously treated ones (was less costly and more efficacious), except in the partial responders subgroup. These results were robust in the sensitivity analysis. **CONCLUSIONS:** TVR dominated BOC and and was cost-effective against WHO 3x GDP criteria in comparison to PR from the national health care system perspective in Colombia.

GASTROINTESTINAL DISORDERS – Patient-Reported Outcomes & Patient Preference Studies

PGI8

QUALITY OF LIFE IN PATIENTS WITH GASTROESOPHAGEAL REFLUX DISEASE IN SLOVAKIA

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OBJECTIVES: The estimated prevalence of complicated gastroesophageal reflux disease (GERD) is approximately 2% in the European population and showing 10-fold increase over the past 20 years. The objective of this paper was to find out the level of QoL in patients with GERD in Slovakia. **METHODS:** The primary method used for the analysis of QoL was the presence of transient disability period and combined questionnaire consisting of 4 parts: A. Demography and socioeconomics (13 items), B. Generic questionnaire (SF-36), C. Visual scale (4 items), D. Complementary (information and habits, 13 items). The Likert scale was used in closed questions. The sample included 100 patients treated in the gastroenterological outpatient clinic (34 men and 66 women). Of these, 72 patients were in productive age. The patients were chosen according to the order in which they visited the clinic. **RESULTS:** One month and two months of sick days were recorded in 8.3% and 7% of patients, respectively; 84,7% of patients did not report any sick days. The loss of money of up to 400 € and between 401 and 800 € was recorded in 11.1% and 4.2 % of patients, respectively; 84.3 % of did not report any loss of money. Present level of QoL was identified as 5.12 on the scale of 10, while in the time of the GERD diagnosis it was 3.86. QoL was 8.25 in the time without GERD and 8.17 in optimal state of health, respectively. Future expectations were perceived as positive in 56% of patients and negative in 44% of patients. **CONCLUSIONS:** A total of 95% of patients were well and very well informed about its characteristics. Paradoxically, only 48% of them used their medications regularly, although regular and occasional administration of medications was shown to have positive impact on health status in 56% and 44% of patients, respectively.

GASTROINTESTINAL DISORDERS – Health Care Use & Policy Studies

PGI9

A LOW ANTIVIRAL TREATMENT RATE IN CHRONIC HEPTITIS C PATIENTS IN TAIWAN- A NATIONWIDE PHYSICIAN-BASED SURVEY

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OBJECTIVES: Hepatitis C virus (HCV) infection is the most common cause of liver cirrhosis and liver cancer worldwide. In addition to low disease awareness both in public and affected patients, a low disease treatment rate remains to be an important issue regarding disease control in primary care. The nationwide prevalence of anti-HCV seropositivity in Taiwan is 4.4%. However, there are scattered hyperendemic areas in Southern Taiwan with an extremely high prevalence rate reaches 57.9% high. Therefore, several public health strategies with periodic assessment aiming to promote liver health have been performed for two decades. **METHODS:** We aimed to elucidate the reasons of lower treatment rate in our country. In this hospital-based, physician-oriented study, a proportional sampling based on previous documented HCV prevalence of geographic locations in Taiwan was conducted. An anonymous questionnaire regarding treatment status in anti-HCV-positive patients was collected from these selected physicians. Patient's information including sex, age, anti-HCV therapy, and the reason for not receiving antiviral therapy was inquired by their primary care physicians. **RESULTS:** Seventy-six physicians were recruited into this survey (Medical center n=46; regional hospital n=23; primary clinic n=7). A total of 2,722 anti-HCV-positive subjects in Taiwan were enrolled into this analysis. Among them, 54.5% (1,479/2,722) had ever received anti-HCV treatment before. The treatment rate of medical centers was 63.1%, which was higher than 52.7% of regional hospitals, and 33.8% of primary clinics, respectively ($p<0.0001$ for pair-wise chi square test; $p<0.0001$ for trend test). Males had a significantly higher motivation for receiving antiviral therapy than females (58.6% vs. 50.5%, $p<0.0001$). The main reason for not receiving anti-HCV therapy was fear of side effects (38%), followed by ineligibility for insurance reimbursement (18%), and lack of awareness (11%). **CONCLUSIONS:** In Taiwan, half of the HCV-infected patients have not received antiviral therapy. The low treatment rate may contribute to HCV hyperendemic status.

MENTAL HEALTH – Clinical Outcomes Studies

PMH1

EVALUATION OF FACTORS AFFECTING TREATMENT RESPONSE AND RISK FACTORS FOR PATIENTS DIAGNOSED WITH NON-PSYCHOTIC MAJOR DEPRESSIVE DISORDER: A LITERATURE REVIEW

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OBJECTIVES: To conduct a systematic review of literature on factors that are affecting patient treatment response and risk factors for patients diagnosed with Non-Psychotic Major Depressive Disorder (MDD). **METHODS:** A literature search was performed using relevant search terms to identify articles published from 2000 to 2010 on the factors affecting treatment response and risk factors for MDD. Studies were identified through electronic Embase, Cochrane, Medline, and PubMed databases. Additional parameters were placed on the final search strategy to limit the retrieval to articles written in English, involving human subjects. **RESULTS:** The initial search revealed 874 articles for factors affecting treatment response and 590 articles for risk factors affecting MDD from PubMed/Medline/Embase/Cochrane databases. After removing duplicates and non-rele-

vant articles, the final articles that were considered for review were 82 for treatment response and 13 for risk factors. Fifty-one studies examined non-genetic factors, serotonin-related genetic factors and variety of genes and polymorphism biomarkers to determine their association with MDD treatment response. Thirty-one studies focused on variables that were found to be associated with some aspect of MDD and their impact on treatment response and include: comorbidity (n=12), demographic and socioeconomic (n=6), and depression-related (n=13) variables. Thirteen studies examined the risk factors for MDD. Of these, 2 studies focused on the role of biomarkers in MDD risk. And, 11 studies focused on variables that were found to be associated with some aspect of MDD and their impact on MDD risk, and focused on comorbidity (n=5), demographic and socioeconomic (n=2), depression-related (n=3), and environmental variables (n=1). **CONCLUSIONS:** The majority of the biomarker studies examined associations between the serotonin transporter, genes and polymorphisms in response to various MDD treatments. With respect to correlate studies, younger age of MDD onset, as well as family history of mood disorders, were both associated with a longer duration of MDD illness.

PMH2

LENGTH OF STAY AND OUTCOMES FOR ADOLESCENTS TREATED FOR SUBSTANCE USE DISORDER: AN ANALYSIS OF DOSE RESPOSE USING PROPENSITY SCORES

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OBJECTIVES: This research uses propensity score methods to identify the relationship between amount of treatment and treatment outcome for adolescents with psychoactive substance use disorder (PSUD). The objective is to describe the dose response relationship in terms relevant in economic evaluation. Outcomes studies in this population show that longer treatment leads to more positive outcomes. The standard for residential programs is a minimum of 21 days of treatment and ideally up to 90 days. **METHODS:** The subjects are 377 adolescents who successfully completed primary treatment from 2004-2010. All were placed at ASAM level III.5 (Clinically-Managed, Medium/High Intensity Residential). The data are from treatment records and a 234-item questionnaire. The questionnaire responses were matched to variables in treatment records creating a rich source of pre-treatment characteristics. This research operationalizes dose with four one-month categories (1 dose=1 month) to capture nonlinearities between service use and outcomes. The outcome is three-month post-treatment drug/alcohol abstinence. The categories were fairly even and captured 92% of variation in dose. The first stage of statistical analysis used multinomial logistic regression to predict dosage with pre-treatment variables while adjusting for characteristics influencing both dose and treatment outcome. Propensity scores were then created for each dosage category. The dose response relationship was assessed using a binomial logistic regression including the four dose categories as dummy variables (lowest dose category as reference). **RESULTS:** The overall relationship between dose and outcome was significant (p=0.01) as were outcome improvements over the four doses. Improvements were significant ($p \leq 0.01$) decreasing as dose increased—Exp.(*B*) was1.204 (1.2 times more likely to abstain) for one month, 1.532 two months, 1.643 three months, and 1.794 for four months (% correctly classified=94.2; – 2LL=44.712; Cox and Snell R^2=0.475.) **CONCLUSIONS:** This research shows a significant dose response relationship between treatment length and treatment outcome with response diminishing on the margin.

PMH3

CLINICAL OUTCOMES OF PATIENTS WITH MAJOR DEPRESSIVE DISORDER TREATED WITH EITHER DULOXETINE OR SELECTIVE SEROTONIN REUPTAKE INHIBITORS IN MEXICO

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OBJECTIVES: To compare treatment outcomes in patients with major depressive disorder (MDD) treated with either duloxetine or a selective serotonin reuptake inhibitor (SSRI) for up to 6 months in a naturalistic setting in Mexico. **METHODS:** Data in this *post hoc* analysis were taken from a 6-month prospective, non-interventional, observational study that included a total of 1,549 MDD patients without sexual dysfunction in twelve countries (N=591 in Mexico). Depression severity was measured using the Clinical Global Impression (CGI) and the 16-item Quick Inventory of Depressive Symptomatology Self-Report (QIDS-SR_{16}). Pain was measured using the pain related items of the Somatic Symptom Inventory (SSI), and quality of life (QoL) was measured using the EQ-5D instrument with the UK population tariff and the EQ-VAS. Probabilities of initiating duloxetine (vs. SSRIs), expressed as propensity scores, were first constructed using logistic regression. Mixed effects modelling with repeated measures (MMRM) analysis was then used to compare treatment effectiveness and QoL between the duloxetine (N=168) and SSRI (N=413) groups, controlling for the propensity scores and other patient characteristics. **RESULTS:** The severity of depression was comparable between the two groups at baseline. Duloxetine-treated patients, however, had a higher level of pain severity and a lower level of QoL (EQ-5D) than SSRI-treated patients at baseline ($p \leq 0.001$). Both descriptive and MMRM regression analyses showed that patients treated with duloxetine had better outcomes during follow-up, compared with patients treated with SSRIs. At 6 months, duloxetine-treated patients had lower levels of CGI (2.25 vs. 2.52, p=0.005), QIDS-SR_{16} (3.95 vs. 5.35, p<0.001), and SSI-pain related (8.52 vs. 9.64, p<0.001), and higher levels of EQ-5D (0.92 vs. 0.87, p<0.001) and EQ-VAS (64.62 vs. 57.63, p=0.006) (MMRM results). **CONCLUSIONS:** Duloxetine-treated patients had better 6-months outcomes in terms of depression severity, pain and QoL, compared with SSRI-treated patients.

PMH4

A COMPREHENSIVE REVIEW OF EPIDEMIOLOGY AND ECONOMIC STUDIES FOR PATIENTS DIAGNOSED WITH NON-PSYCHOTIC MAJOR DEPRESSIVE DISORDER

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OBJECTIVES: To conduct a systematic review of literature in on epidemiology and economic studies for patients diagnosed with Non-Psychotic Major Depressive Disorder (MDD). **METHODS:** The initial search strategy was developed in the PubMed/Medline database, and was then translated for the Cochrane and Embase database searches. Search strings for epidemiology and economics studies for MDD were constructed using varied approaches that included the use of MeSH terms, as well as keywords that would afford the best retrieval. Search statements were then combined to produce a final search set. Additional parameters were placed on the final search strategy to limit the retrieval to articles written in English, involving human subjects and published between 2000 and 2010. **RESULTS:** Our search revealed 289 articles for epidemiology and 200 articles for economic studies on MDD from PubMed/Medline/Embase/Cochrane databases. After removing duplicates and non-relevant articles, 17 for epidemiology and 26 for economic studies were included in the final analysis. Fifteen studies on epidemiology were focused on MDD prevalence, one study was on cumulative incidence. Prevalence estimates were higher for lifetime than past year and ranged between 3.1% and 26.6% for lifetime prevalence and between 1.5% and 11.7% for past-year prevalence. Two studies examined burden of illness, one study budgetary impact of MDD, 14 studies examined cost effectiveness of MDD treatments, 3 studies examined cost utility analysis and 6 other studies examined retrospective claims analysis. **CONCLUSIONS:** MDD prevalence was higher in the lifetime estimates, when compared to the estimates reflecting shorter time frames, although there appeared to be greater variability in the lifetime estimates. Overall, the cost of treating MDD varied with type of study, study time frame, study perspective, the year in which the costs were calculated, and the pharmacotherapy prescribed.

PMH5

EVALUATION OF ASSOCIATIONS AMONG BIOMARKERS, CORRELATES AND TREATMENT EFFICACY IN CLINICAL STUDIES IN PATIENTS DIAGNOSED WITH NON-PSYCHOTIC MAJOR DEPRESSIVE DISORDER: A LITERATURE REVIEW

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OBJECTIVES: To perform a systematic review of literature in peer-reviewed journals on clinical biomarkers, correlates and treatment efficacy in clinical studies on patients diagnosed with Non-Psychotic Major Depressive Disorder (MDD). **METHODS:** The initial search strategy was developed in the PubMed/Medline database and was then translated for the Cochrane and Embase database searches. Search strings for biomarkers, correlates and treatment efficacy in patients with MDD were constructed using varied approaches that included the use of MeSH terms, as well as keywords that would afford the best retrieval. Also included were search terms that used an asterisk as a wildcard applied to a word stem. Search statements were then combined to produce a final search set. Additional parameters were placed on the final search strategy to limit the retrieval to articles written in English, involving human subjects and published between 2000 and 2010. **RESULTS:** The initial search revealed 871 articles from PubMed/Medline/Embase/Cochrane databases. After removing duplicates and non-relevant articles, the final articles that were included in the review were 131. Forty-eight studies examined biomarkers and primarily focused on the relationship between biomarkers and MDD treatment response. Only 29 of the 48 studies found a significant association between a biomarker and treatment response. Twenty-nine studies examined MDD correlates such as comorbidity or demographic variables. A poorer response to treatment was found for those patients who experienced comorbid anxiety, irrespective of the type of treatment. Fifty-four studies focused on treatment efficacy and are divided into 3 groups: SSRIs only, SNRIs only, and a comparison across SSRIs, SNRIs, and bupropion. Overall, the SSRIs showed comparable efficacy when compared to each other or placebo. **CONCLUSIONS:** Most of the biomarker studies examined associations between the serotonin transporter and response to various MDD treatments. The majority of efficacy studies found that the treatments that are within the class had comparable efficacy.

MENTAL HEALTH – Cost Studies

PMH6

THE IMPACT OF ANTIPSYCHOTICS POLYPHARMACY ON HEALTH CARE COSTS OF PEOPLE WITH MENTAL DISORDERS IN SÃO PAULO CITY, BRAZIL

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OBJECTIVES: Antipsychotics polypharmacy (AP) has been associated with more adverse drug effects, higher treatment costs, worse clinical outcomes and sudden death. Though, the frequency of such practice may reach 50 % in some clinical settings. The aims of this study were to estimate AP costs and its influence on the direct costs of health care package in a sample of people with mental disorders in São Paulo city, Brazil. **METHODS:** We used a bottom-up approach for the estimation of direct costs according to public health service provider perspective. Direct costs included costs with accomodation (residential service), inpatient, outpatient and emergency services and treatment received in the previous month, in 147 subjects with mental disorders living in twenty residential services during the year 2011. We evaluated quality of life, social behavior problems, psychiatric diagnosis, severity of symptoms, sociodemographics characteristics and pattern of health service use. **RESULTS:** AP was found in 38% of the sample and it was not related with gender, age, severity of psychiatric symptoms, quality of life and social behavior problems. Antipsychotics monotherapy costs were related with the type of antipsychotic: Atypical antipsychot-