SYSTEMIC DISEASES/CONDITIONS – Cost Studies

**PSY3**

**MATTERS OF WEIGHT: FINANCIAL BURDEN OF OVERWEIGHT AND OBESITY IN MEXICO**

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OBJECTIVES: Estimate direct and indirect costs generated by eight diseases related to obesity in Mexico. Mexican population for the period 1999-2002. METHODS: Data on diabe-tes, cardiovascular disorders (CVD), osteoarthritis, and malignant tumors (esophag- us, pancreas, breast, cervix, colo-rectal) are analyzed for 2004-2003. Cost of illness approach was used for direct cost estimates; Indirect costs are estimated by the human capital approach that includes lost income for premature death (LIDP), tem-porary disability subsidies (TDS), permanent disability pension (PDP) and opportu-nity cost for the non-medical care giver (OCC).

RESULTS: Annual average direct costs generated by 7.5% of the detected diseases related to obesity represented 17% of the total public medical care expenditure (0.1% of GDP) of 2013. Diabetes and CVD contributed with 80% of such costs. Annual average indirect costs represented 0.2% of GDP of 2013 and are dominated by LIDP (64%) followed by PDP (19%) and OCC (10%).

CONCLUSIONS: Fiscal policies should show the need of continue efforts to address the challenge posed by obesity for both the Mexican health care system in terms of financial sustainability and the Mexican society as a whole in terms of significant reductions in productivity in the short and midterms. Of particular relevance is the recent implementation of the National Strategy to Prevent and Control Obesity in the Mexican Health System. Part of the public perspective in São Paulo State Health Secretariat (SHS/SP).

**PSY4**

**ACROMEGALY PATIENTS WITH INADEQUATE RESPONSE TO MAXIMUM DOSE OCCTROTE-LAR PROGRESS TO TREATMENT FAILURE: ECONOMIC EVALUATION AND INCREMENTAL BUDGET IMPACT ANALYSIS FROM THE PUBLIC PERSPECTIVE TO SÃO PAULO STATE**

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OBJECTIVES: This study evaluated the cost-effectiveness of pegvisomant compared to octreotide-LAR and the incremental Budget Impact Analysis (IBIA) from the public perspective in São Paulo State Health Secretariat (SHS/SP). The economic evaluation assumed octreotide-LAR to be first line treatment as (recommended to acromegaly Ministry of Health Brazilian guideline). In certain clinical conditions patients who fail to achieve biochemical control will receive octreotide-LAR staggered dose (off-label use). This population was used for the analysis, and compared to a population of patients with acromegaly treated with pegvisomant. To estimate costs and treatment outcomes, a Markov model was developed, representing the control rate of patients treated with pegvisomant or maintained dose staggered octreotide-LAR. All patients entering the model who were unresponsive to the maximum octreotide-LAR dose based on the transition risk and according to control or non-control of disease, patients could transition to one of the following states: control, non-control and death (absorbing state). A time horizon of 35 years was assumed and a discount rate of 5% per annum was applied. The outcomes of interest were: “years of life” and “years living with disease”. The annual cost for each patient was calculated based on number of patient visits and number of treatments. The epidemiological demand method was applied that resulted in 210 patients (2015).

RESULTS: The IBIA was estimated to increase by 24.8% of current spending, if pegvisomant is reimbursed by the government in SHS/SP for “year of life” and “years living with disease control” were 0.46 and 1.37 years, respectively, and for pegvisomant saving BRL 313,599.84. The final result did not change; the sensitivity analysis showed a 21% increase in cost. The incremental Budget Impact Analysis (IBIA) from the public perspective in São Paulo State Health Secretariat (SHS/SP). The use of pegvisomant compared to octreotide-LAR, improved 4.46 years response duration, prevented 4.5 bleeding episodes and 1.5 admissions over a lifetime horizon. Pegvisomant proves to be the dominant approach compared with octreotide-LAR. CONCLUSIONS: Use of pegvisomant in the TTP treatment pathway, compared with octreotide-LAR, improves clinical outcomes, by increasing and maintaining platelet count, reducing bleeding events and rescue therapy need. These benefits generate cost savings and positioning romiplostim as a dominant approach.

**PSY5**

**BURDEN OF COST IN CHRONIC GRAFT-VERSUS-Host DISEASE FOLLOWING HEMATOPOIETIC STEM CELL TRANSPLANTATION: PREDICTIONS FOR THE NEXT DECADE**

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OBJECTIVES: With advances to treating acute graft-versus-host-disease (aGvHD), chronic graft-versus-host disease (cGvHD) has become a focus of morbidity fol-low ing allogeneic hematopoietic stem cell transplantation. Given that cGvHD often presents years following a transplant, our objective was to estimate its burden of cost based on published estimates of incidence, morbidity, lost work time and survivorship. METHODS: Treatment pathways and adverse events were evaluated in terms of direct cost from published sources. Additional cost estimates for read-mission and follow-up care were annualized and compared between non-cGvHD patients and grades I-IV of cGvHD over a 5 year horizon, based on studies conducted in the United Kingdom, United States and Brazil. The population cohort was based on age-adjusted United States Census Bureau reported average wages, wage growth and the probability that with illness these would be foregone. RESULTS: The burden of cost from cGvHD is forecasted on long term and morbidity, mortality and consequent wages foregone, even as compared with the cost of transplant and normative follow-up. Relapse due to primary disease (29%) and cGvHD (22%) were reported by the literature to be the leading causes of premature death. Mortality, chronic complications and morbidity were all costs important in cGvHD. The estimated mean costs per ICU patient discharged were €13,950 for cGvHD and €14,711 for propofol resulting in a cost-saving of €761 per patient. Sensitivity analysis confirmed savings upon the use of cGvHD treatments ranging from €598 to €7,418. Introducing cGvHD in hospitals in sedation for ICU would result in yearly savings of €2,940,983,900.00 ($24,98) in wages is lost from 43,750 years of foregone employment yielding a total of $1,041.50 ($30.28).

CONCLUSIONS: The human capital perspective should be considered in making policy recommendations for coverage of cGvHD treatments that affect those, including Central and South American patients, who survive acute complications of allogeneic transplantation.

**PSY6**

**COST-EFFECTIVENESS OF ROMIPLOSTIM AS FIRST-LINE PRIMARY IMMUNE THROMBOCYTOPENIA (ITP) TREATMENT IN ADULT SPLENECTOMISED PATIENTS WHO ARE REFRACTORY TO OTHER TREATMENTS AND AS SECOND-LINE ITP TREATMENT IN ADULT NON-SPLENECTOMISED PATIENTS WHERE SURGERY IS CONTRAINDICATED IN COLOMBIA**

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OBJECTIVES: To perform a cost-effectiveness analysis of romiplostim as first-line ITP treatment in adult splenectomised patients who are refractory to other treat-ments and as second-line treatment in adult non-splenectomised patients for whom surgery is contra-indicated vs. eltrombopag. METHODS: A Markov model was used to simulate treatment patterns in the systematic review has initially provided results of effectiveness of the inter -vention and performs a cost-effectiveness analysis comparing: (a) Diet; (b) diet plus rescue therapy need. These benefits generate cost savings and positioning romiplostim as a dominant approach.

**PSY7**

**SYSTEMATIC REVIEW AND COST-EFFECTIVENESS ANALYSIS OF DRUG USED IN OBESEITY TREATMENT IN BRAZIL, UNDER HEALTH SYSTEM PERSPECTIVE**

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OBJECTIVES: Present a systematic review of efficacy, effectiveness and safety of pharmacological treatments (sibutramine and orlistat) used in obesity treat-ment and performs a cost-effectiveness analysis comparing: (a) Diet; (b) diet plus sibutramine and (c) diet plus orlistat under the public health system perspec-tive. METHODS: A systematic review of literature produced the estimates of co-morbidities risks and disease progression with and without the interventions. A Markov model that simulates the related obesity comorbidities as chronic kidney disease and diabetes mellitus was build. Discount rate assumed 5% and the outcome data was taken from international literature and was measured by QALY. Direct cost was calculated by the authors using data from the public health system databases, as well as in relation of the cost in the state of São Paulo. PARTIAL RESULTS: The systematic review has initially provided results of effectiveness of the inter-ventions. Weight loss values after one year of treatment ranged from -0.35 kg to sibutramine 15mg and -2.89kg to standard care (only Diet). All patient gain weight after intervention in a rate of 0.385kg/month (first four years), and at 1kg/year in the next years. Annual costs of co-morbidities were estimated in US$7,017.00 to infarction and US$1,335.00 to diabetes. CONCLUSIONS: More data will be collected, to complement this preliminary serving as input to complete de cost-effectiveness model.

**PSY8**

**COST-MINIMIZATION ANALYSIS OF DEXMEDETomidINE VERSUS PROPOFOL IN MECHANICAL VENTILATED PATIENTS AT ICU**

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OBJECTIVES: To evaluate costs associated with the use of dexmedetomidine in comparison with conventional clinical practice in Portugal in intensive care unit (ICU) patients through a cost-minimisation and a budget impact analy-sis. METHODS: The cost minimization was conducted considering the use of dexmedetomidine instead of propofol used as sedation during mechanical ventilation, without a change in sedation profile. RESULTS: The average cost per patient in ICU ward was €9,350 for dexmedetomidine and €14,711 for propofol resulting in a cost-saving of €761 per patient. Sensitivity analysis confirmed savings up the use of dexmedetomidine ranges from €598 to €7,418. Introducing dexmedetomidine in hospitals in sedation for ICU would result in yearly savings of €2,940,983,900.00 ($24,98) in wages is lost from 43,750 years of foregone employment yielding a total of $1,041.50 ($30.28).

CONCLUSIONS: The human capital perspective should be considered in making policy recommendations for coverage of CoVHD treatments that affect those, including Central and South American patients, who survive acute complications of allogeneic transplantation.