ELEVATION OF AND OUTCOMES OF WEIGHT CONTROL PROGRAM IN A REGIONAL HOSPITAL AT SOUTHERN TAIWAN

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OBJECTIVE: To evaluate the cost and outcomes of a weight control program in a regional hospital at southern Taiwan.

METHODS: A total of 249 subjects with BMI over 24 were recruited from August 2003 to June 2004. Monthly courses providing nutritional consultation and exercise instructions for fitness were offered in three sessions per week with class size less than 25 members. Content of the course includes Physical Fitness exercise coaching, healthy diet and prescription of medication for weight control, and consultation for behavior change. Statistical analysis of data was performed with SAS software.

RESULTS: The mean age of the 249 subjects is 38.39(±12.36) years old, with 202(81.1\%) female and 47(19.9\%) male. The mean of BMI is 29.98(±5.10) kg/m\(^2\), mean of body fat percentage is 38.88(±7.54). Cost for the weight control program includes pharmaceutical, special formula of diet, education for healthy eating, aerobic exercise coaching, personnel and administrative expense. Analysis revealed the total cost for each person-visit of a subject is 4426 NT dollars, with 5016 NT dollars per visit for subjects accepting additional fitness training. The weight decrease in average is 4.52 + 7.52 kg, and the length of follow up in average is 68.97 + 54.36 days. In total there is 610.3 kg of weight reduction during the period of the project and the average cost for each kg weight reduction is 2212 ± 516 NT dollars. Statistical analysis with Mixed Model revealed that after adjusted by gender and age, the BMI of subjects will decrease by an estimate of 0.03757 with the increase of each day.

CONCLUSION: The strategy of combining medication prescription, diet consultation and exercise coaching to reduce body weight in the beginning of the course is an effective enforcement to motivate the subject to establish the habit of regular exercise.

GREATER SEVERITY OF ILLNESS, RISK OF MORTALITY, LENGTH-OF-STAY, AND HOSPITAL COSTS IN PATIENTS WITH HYponATREMIA

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OBJECTIVE: Among hospitalized patients, hyponatremia (serum sodium <136 mmol/L) is a common problem associated with increased mortality, morbidity, and length-of-stay (LOS) in clinical trials and other studies. However, studies relating hyponatremia to costs, controlling for the other factors, are limited. The purpose of this study was to examine the relationships between hyponatremia and hospital mortality, LOS, and costs in naturalistic settings with large sample size.

METHODS: We conducted a retrospective analysis of nationally projected adult acute care inpatient discharges from January 2003–June 2006, in the Premier Perspective clinical and economic database of >37 million actual discharges from ~600 US hospitals. We compared patients with hyponatremia (ICD-9-CM diagnosis code 276.1x) during hospitalization to a comparably sized random sample without hyponatremia, matched on age, gender, and comorbidities. Descriptive analyses including APR-DRG severity-of-illness, mortality, LOS, and costs. Chi-squared tests were used for mortality comparisons and Kruskal-Wallis for LOS.
and cost comparisons, with alpha = 0.05. Multivariate regression analyses adjusted for potential cofactors influencing descriptive analyses: logistic for mortality, negative binomial for LOS, and log-linear for costs. RESULTS: Severity of illness was severe/extreme for 60.2% of 2,989,776 projected hemophilia patients compared to 39.7% of 2,994,724 matched non-hemophilia patients. Mortality among hemophilia patients was greater than among non-hemophilia patients (6.8% versus 5.6%; p < 0.0001). On average, hemophilia patients were associated with 2.6 more hospital days (8.5 ± 10.5 versus 5.9 ± 7.7) and 1.5 more ICU days (6.1 ± 8.5 versus 4.6 ± 6.7) than non-hemophilia patients (both p < 0.0001). Average total hospital costs were $3532 greater for hemophilia patients than non-hemophilia patients ($14,317 ± 23,251 versus $11,064 ± 18,325; p < 0.0001). Multivariate analyses confirmed greater mortality (Odds ratio 1.03, p < 0.0001) and LOS among patients with hemophilia (p < 0.0001). CONCLUSION: Hemophilia is associated with greater severity of illness and risk of mortality, longer LOS, and greater hospital costs. Correcting hyponatremia may be important in improving these outcomes.

COST-UTILITY STUDY OF RECOMBINANT FACTOR VIII IN THE TREATMENT OF HEMOPHILIA A IN MEXICO
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OBJECTIVE: To determine the Hemophilia A (HA) treatment (pdFVIII or rFVIII) with the lowest cost per quality-adjusted life-year (QALY) in Mexico. METHODS: A cost-utility study was conducted, with an institutional perspective, in two time horizons, 30 and 50 years. The discounting rate was three percent for costs and benefits. The source of information was a meta-analysis of the international literature validated by Mexican hematologists using the Delphi technique. A decision tree with Bayesian approach and a Markov chain considering the probabilities of getting infected with Hepatitis C Virus (HCV) and Immunodeficiency Virus (HIV) because of the use of a Factor VIII concentrate and the availability of the products were performed, we also included the probabilities of HCV and HIV infections due to the use of cryoprecipitates because of the lack of the treatments analysed. The model included the states of health: HA without infection, HA+HIV, HA+HIV, HA+HIV-HCV and death. Due to lack of published information and low incidence observed, the probability of getting infected with an emergent disease (Creutzfeldt-Jakob, SARS) due to the use of FVIII treatment was not included. The results were evaluated with incremental analysis and net benefits varying the incidence of HIV and HCV and the availability of the products. The sensitivity analysis was one-way, two-way and probabilistic (acceptability curves and net benefits).

RESULTS: Patients using rFVIII get more benefits with the lowest cost per QALY when comparing to pdFVIII treatment (30 years-analysis: rFVIII = 16.45 QALY and USD$50,673/QALY, pdFVIII = 11.05 QALY and USD$51,950/QALY, ICER USD$48,066; 50 years-analysis: rFVIII = 20.79 QALY and USD$51,406/QALY, pdFVIII = 12.23 QALY and USD$60,765/QALY, ICER USD$38,042). The sensitivity analysis varying the incidence of HIV and HCV showed the robustness of the base study. CONCLUSION: Recombinant Factor VIII is a cost-effective option in the treatment of patients with hemophilia A in Mexico.

COST-UTILITY ANALYSIS OF SUBCUTANEOUS VERSUS INTRAVENOUS IMMUNOGLOBULIN
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OBJECTIVE: Immunoglobulin replacement is standard therapy that prevents/controls infectious complications caused by primary immunodeficiency disorders especially common variable immunodeficiency and X-linked agammaglobulinemia. In Canada, the therapy is administered intravenously (IVlg) at hospital, whereas in some European countries it is administered subcutaneously (SCIg) at home and intravenously at home/hospital. Canadian Blood Service is considering establishing SCIg as an alternative to IVlg. Concerns over increasing health care costs raise questions about its cost-effectiveness. The present study is intended to estimate cost effectiveness of SCIg against hospital-IVlg and hypothetical home-IVlg from Canada’s public health care payer perspective. METHODS: A Markov decision-analytical model for hypothetical patients in 12-month therapy was used to estimate the incremental cost-effectiveness ratio (ICER) per quality-adjusted life year (QALY) for SCIg compared with hospital-IVlg and home-IVlg. Serious adverse events, mortality, number and severity of infections were considered. RESULTS: SCIg dominates (greater benefits at lesser costs) hospital-IVlg and produces an incremental cost effectiveness ratio (ICER) of CDN$39,500/QALY when compared to home-IVlg. ICER is sensitive to changes in utility of infection, hospital charges, and infusion materials. CONCLUSION: SCIg appears to be the most cost-effective intervention if decision makers are willing to pay CDN$39,500/QALY. Therefore, it could be gradually established as an alternative to patients who are willing and clinically suitable to switch. Uncertainty in the available comparative clinical effectiveness warrants a reliable comparative clinical study.

PREVALENCE OF METABOLIC SYNDROME AND ITS IMPACT ON HEALTH CARE RESOURCE UTILIZATION
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OBJECTIVE: To assess the prevalence of metabolic syndrome in five European countries and to quantify its impact on resource utilization. METHODS: Data were from the 2006 European National Health and Wellness Survey (NHWS), a self-administered, Internet-based study of the health care attitudes, behaviors, disease states, and outcomes of a demographically representative sample of adults age 18+ across five European countries: France, Germany, Italy, Spain, and UK. Individuals were categorized with metabolic syndrome if they were diagnosed with diabetes and had two or more of the following: hypertension, high cholesterol, or obesity (BMI ≥ 30). Prevalence estimates were computed using frequency weights based on gender and age distribution of each country as reported in the International Database of the U.S. Census Bureau. Linear regression models were developed using unweighted data to assess the association between metabolic syndrome and resource utilization in the past six months. Covariates included in the models included gender, age, marital status, education, and country of residence (reference=UK). RESULTS: There were 1092 respondents across the five European countries that were categorized as having metabolic syndrome. These respondents project to approximately 6.24 million individuals affected by metabolic syndrome. The prevalence of metabolic syndrome varied across the 5 countries.