ECONOMIC EVALUATION OF RECOMBINANT FACTOR XIII PRODUCTS IN TREATMENT OF HAEMOPHILIA A. IN KOREA

Kim JY1, Lee JH2, Hён JH3, Lee EK1
Sook Myung Women’s University, Seoul, South Korea, 1Sook Myung Women’s University, Seoul, South Korea

OBJECTIVES: Haemophilia A is a hereditary genetic disorder with a relatively high burden of disease from the perspective of both society and the individual patient. Kogenate FS is a second-generation full-length recombinant factor VIII (FVIII), produced with the addition of human albumin during formulation. It shows a lower incidence of inhibitors compared with other recombinant factor VIII products, which has an impact on economic evaluation because the haemophilia patients with inhibitors have to be treated with a significantly higher dosage or expensive bypassing agents. The main objective of this study is to conduct economic evaluation of Kogenate FS compared with Recombinate in haemophilia A patients in Korea. METHODS: A cost-minimization analysis was performed under the assumption that Kogenate FS and Recombinate were clinically equivalent for treating bleeding episodes. A decision-analytic model was developed to estimate the lifetime costs by reflecting each different treatment strategies for haemophilia A patients with inhibitors or not. If patients had inhibitors, it was raimmed according to the inhibitor titres into one of three pathways: <8IU, 8–100IU, and >100IU. The analysis was conducted based on the societal perspective, and costs were discounted at 5% annually. Sensitivity analyses were performed on crucial parameters. RESULTS: Incidence of inhibitor for Kogenate FS and Recombinate was 8.13% and 16.9% respectively. Using the base case analysis, the expected costs of treatment with darbepoetin alfa was less than OLS on raw and log-transformed expenditures (homoscedastic and heteroscedastic re-transformations), and generalized linear models (GLM) with log-link and Gamma/ Poisson families, including 2-part variants of these 5 models. Box-Cox test and Modified Park’s test determined the link and family in the GLM models. LINK, RESET, Houser-Lemeshow and Pearson’s correlation test determined model fit, while Copas test was employed for over-fitting and cross validation. Incremental expenditure from the method of recycled predictions summed over population with obesity gave the total expenditure. Impact of obesity on SF12 mental and physical health component was assessed by OLS. Covariates included age, gender, race, ethnicity, income, geographic location, and comorbidity. RESULTS: The 2-part model of OLS on raw expenditure was the only model to pass all the specification and cross-validation tests. Based on this model, annual incremental expenditure of obesity was $1188.50 (95% CI: $113.70–$1193.40). Total direct expenditure of obesity was $72 billion (95% CI: $68.2 to $75.8 billion), nearly 3-fold increase compared to 1998 estimates. SF12 physical component score was lower by 3.7 (p < 0.001) while the mental component score was lower by 1.2 (p < 0.001) for those with obesity. These decrements are similar to those observed for diabetes or hypertension. CONCLUSIONS: Obesity exerts an enormous economic and humanistic burden on the U.S. civilian non-institutionalized population.

ECONOMIC EVALUATION OF DARBEPOETIN ALFA AND EPOETIN IN HEMODIALYSIS PATIENTS WITH ANEMIA AND CHRONIC KIDNEY DISEASE

Vertskui P1, Lesnichova P1, Aleksieva M1, Nekrozova N1
Moscow Medical Academy named after IM Sechenov, Moscow, Russia, 1Russian Society For Pharmacoeconomics and Outcomes Research, Moscow, Russia, 2Moscow Medical Academy named after IM Sechenov, Moscow, Russia

OBJECTIVES: To perform economical evaluation of darbeperoin alfa vs. epoetin alfa in hemodialysis patients with anemia and chronic kidney disease. METHODS: The modeled study was performed. Proportion of patients receiving alternative eritropoese-stimulating proteins (ESP) dosing regimen, efficacy and safety of drugs were extracted from multicenter randomized study made by Niessen et al (American Journal of Kidney Diseases 2002; 31:110–8). Cost of treatment with ESPs for 28 weeks and cost-minimization ratio (CMR) were calculated from the Russian reimbursement system point of view. RESULTS: According to selected study, the efficacy and safety profile of darbeperoin alfa was similar to that of epoetin alfa. Mean dose decrease from 5.18 µg/kg to 4.18 µg/kg was observed in darbeperoin alfa group, while mean dose increase from 12,706 to 3,639 was registrated in epoetin alfa group during 28 weeks. The costs of used medications were the same for darbeperoin alfa and epoetin alfa (RUB230/448.1 vs. RUB 229/427.19 (USD259 vs. USD276.56). The cost of medical manipulations were less for darbeperoin alfa due to its reduced dosing fre- quency (RUB2284.8 vs. RUB854.8 (USD272 vs. USD217.2) accordingly. Cost- minimization analysis showed that cost of treatment with darbeperoin alfa is less than epoetin alfa (CER = RUB3384.7 ($1073)). Sensitivity analysis was made on the basis of model, constructed with data extracted from other study (Morishita et al. Nephrology 2004; 6). It confirmed the results of present work. CONCLUSION: According to the model darbeperoin alfa seems to be as effective and safe as epoetin alfa, but it takes fewer costs for treatment of anemia in hemodialysis patients with chronic kidney disease due to low dosing frequency and dose saving effect.