Dutasteride plus Tamsulosin therapy versus Tamsulosin Monotherapy in the treatment of lower urinary tract symptoms?: A Cost-utility analysis

Mohammad Peikanpour a,*, Zahra Sharif a, M. Javad Foroughi Moghaddam b

Abstract

Introduction: Lower Urinary Tract symptoms (LUTS)? impacts the quality of life of about 23.8% of the male population in Iran, diagnosed with Benign Prostatic Hyperplasia, annually. The current pharmacological treatment protocol for LUTS are α-blockers and 5-alpha reductase inhibitors (such as Dutasteride). This study was designed to estimate the cost-utility of dutasteride plus tamsulosin therapy for LUTS from the perspective of the Iran Health System.

Methods and Results: A Markov model was developed to estimate healthcare costs and patient outcomes, measured by quality-adjusted life years (QALYs), for patients with moderate to severe LUTS. The model, compared four mutually exclusive health states in two alternative treatment options: tamsulosin (0.4 mg/day) and dutasteride plus tamsulosin (0.5mg+0.4 mg/day), time horizon was 35 years, with the duration of one year per cycle. The discount rates for utilities and costs were 3% and 5% respectively. A meta-analysis was conducted to estimate the cost-utility of dutasteride plus tamsulosin therapy for LUTS from the perspective of the Iran Health System.

Utility weights for each health states were obtained from a meta-analysis of published studies with EQ5D method. These weights are calculated 0.86, 0.79, 0.72 and 0 in mild, moderate, severe and death states, respectively. The probability of ASEs (CI 95%) were calculated as: TUR syndrome (0-0.0109), Blood transfusion (0.0296-0.0676), Urinary incontinence (0.0198-0.1894), urethral stricture (0.0392-0.0769) and UTI (0.0169-0.0787). After 35 years, the incremental cost-effectiveness ratio for combination therapy was $5159, well within the threshold range typically applied in Iran. PSA showed that the probability of being cost-effective in combination therapy is 89% to 94%, also the model showed the most sensitivity to dutasteride unit price and surgery incidence with monotherapy.

Conclusions: Combination therapy has a high probability of being cost-effective in comparison to tamsulosin monotherapy in Iran.

Key words: Lower Urinary Tract symptoms, Dutasteride, cost-utility, Markov model.

Grants: Ahran Tejarat Company.