

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

Authors' Affiliations:

^a Ph.D. candidate of Pharmacoeconomics and Pharma management, Faculty of Pharmacy, Shahid Beheshti University of Medical Sciences, Tehran, Iran;
^b Ph.D. of Pharmacoeconomics and Pharma management, Faculty of Pharmacy, Shahid Beheshti University of Medical Sciences, Tehran, Iran

Abstract Presenter:

Mohammad Peikanpour; Pharm.D.; Ph.D. candidate of Pharmacoeconomics and Pharma management, Faculty of Pharmacy, Shahid Beheshti University of Medical Sciences, Tehran, Iran;
E-mail: M_peikanpour@yahoo.com
Mailing address: Faculty of Pharmacy, Shahid Beheshti University of Medical Sciences, Tehran, Iran

*Correspondence:

Mohammad Peikanpour; Pharm.D.; Ph.D. candidate of Pharmacoeconomics and Pharma management, Faculty of Pharmacy, Shahid Beheshti University of Medical Sciences, Tehran, Iran;
E-mail: M_peikanpour@yahoo.com
Mailing address: Faculty of Pharmacy, Shahid Beheshti University of Medical Sciences, Tehran, Iran

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 adverse drug reactions (ADRs) and After Surgery Events (ASEs) probabilities. Total Cost consists of the direct costs of medications, as well as inpatient and outpatient services (general practice and urology specialist examinations, hospitalizations, laboratory services, diagnostic procedures, TURP surgical procedures, treatment of AUR, and treatment in emergency care services). One-way sensitivity testing and Probabilistic Sensitivity Analyses (PSA) were performed for virtual cohort of 1,000 patients with LUTS.

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.

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