Finasteride as a Neo-Adjuvant Treatment for TURP- Literature Review

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Abstract

Objective: Conducting a mini review of the role of Finasteride in decreasing blood loss associated with TURP.

Methods: PubMed search of all English literatures correlating bleeding associated with TURP and finasteride treatment by two independent researchers, over 3 months. This was followed with a group discussion to choose relevant publications to be included in the manuscript.

Results: Few publications were identified concerning our study objective. Data were retrieved concerning mechanism of action of finasteride and suggested duration of treatment.

Conclusion: Finasteride is an effective drug that may be considered pre-TURP for patients with prostatic volume more than 30 cc. The duration of treatment ranges from 1- 6 weeks depending on the prostatic volume.

Keywords: Finasteride; 5 alpha reductase inhibitor and TURP

Introduction

Benign Prostatic Hyperplasia (BPH) is considered one of the commonest urological conditions in elderly >50years [1-3]. BPH leads to lower urinary tract symptoms such as bladder out flow obstruction and hematuria [1,2].

Finasteride is a selective 5 Alpha Reductase Inhibitor (ARI) which prevents the conversion of testosterone to Dihydrotestosterone (DHT) which leads to decrease the symptoms of urethral obstruction and hematuria [1,2,4].

Hematuria resolves within 1-2 weeks after the treatment with finasteride in 80% of the patients [1,4,5]. Bladder out flow obstruction symptoms decrease subsequently after decreasing DHT levels leading to decrease glandular and fibro muscular tissue of the prostate and overall decrease of the prostate tissue by 25-30% after 6-12 months treatment by finasteride [1,4].

When medical treatment fails, surgery will be 1st line of treatment [1,5,6]. Hematuria following TURP represents the most bothering complication [1,5-7].

Preoperative treatment with finasteride is essential to decrease perioperative bleeding and consequently to decrease

the rate of postoperative complications [1,3-7].

Finasteride is usually given from 2 weeks to 6 months preoperatively to decrease angiogenesis and Microvascular Density (MVD) which leads to decrease the bleeding during and after TURP [6-7]. Pre-operative treatment with finasteride for 6 months also leads to overall decrease in the size of prostate tissue which indirectly will decrease the operative time [6].

Shanmugasundaram, et al. [8] conducted multi center Randomized Control Trial (RCT) about the role of 5ARIs in the pre and post-operative settings and they found that 5ARIs decrease the operative bleeding and post-operative complications such as blood transfusion, clot retention, urinary tract infections and post TURP urinary retention.

Methods

PubMed search of all English literatures correlating bleeding associated with TURP and finasteride treatment by two independent researchers, over 3 months. This was followed with a group discussion to choose relevant publications to be included in the manuscript.

Results

Few publications were identified concerning our study objective. We could retrieve data concerning Data mechanism of action of finasteride and the suggested duration of treatment.

Discussion

Finasteride has been widely used as the 1st line of treatment of BPH and hematuria associated with it [1]. Most of urologists use the 5ARI as treatment for the hematuria associated with BPH more than a pre-TURP treatment to decrease the bleeding [1,9].

Hagerty, et al. [10] conducted the 1st prospective cohort study about the role of preoperative finasteride for 25 patients given finasteride for about 2-4 months and 50 controls without treatment. They followed both groups for 4 months and found that only 8.3% of patients underwent preoperative treatment experienced perioperative bleeding while 37% of the control group got bleeding during the operation. So, they concluded that preoperative finasteride decreases the bleeding rate, post-operative complication such as clot retention especially in

patients with larger prostate size > 30 gm. Finasteride decreases the bleeding through decreasing the expression of vascular endothelial growth factor (VEGF) which in turn decrease the angiogenesis and bleeding [1,6].

Foley, et al. [11] conducted a prospective observational control study of 57 patients with chronic intermittent hematuria and then randomly divided in 2 groups, one given finasteride and others are control group. The rate of recurrent hematuria was significantly less among group treated with finasteride.

Ozdal, et al. [5] demonstrated the effect of short term pretreatment with finasteride in BPH patients. They collected 40 patients with BPH who will perform TURP and randomized them into 2 groups, 20 of them received 5 mg of finasteride for 4 weeks while other 20 patients act as a control. They found that there is a significant decrease in blood loss perioperatively among the patients who received finasteride and there is subsequent decrease in the post-operative complication such as blood transfusion and clot retention. Although the size of respected prostate in finasteride group was larger than the control group (23.25 gm Vs 18.73 g), the amount of perioperative bleeding in the finasteride group was less (173.47 ml Vs 235.46ml in the control group). Bleeding per gm respected prostate was less in the finasteride group 7.6ml/g Vs 13.99ml/g in control with $p < 0.0001$.

Donohue, et al. [7] reported that 5 mg of finasteride taken daily for 2 weeks Pre-TURP decreases the blood loss during operation in 70 patients randomized into finasteride and placebo group with mean age 70 years old.

Hochberg, et al. [12] reported the effect of finasteride on decreasing MVD in a study of 22 patients with clinical BPH and hematuria.

Pareek, et al. [13] also showed a significant decrease in the expression of VEGF and MVD in patients treated with finasteride in a study of 24 patients receiving finasteride for 6 weeks prior to the surgery.

Carlin, et al. [14] confirmed the efficacy of 5 mg finasteride for 2 weeks in the treatment of BPH related hematuria in a prospective study of 12 patients.

McConnell, et al. [15] observed that oral administration of finasteride for only 1 week decreases the levels of DHT in the prostate by 85% in a randomized, double blinded, placebo controlled study.

Kearney, et al. [16] reported that the effective duration for finasteride to stop hematuria is dependent on the prostatic volume as one week may be sufficient for prostatic volume of 40 cc, while 45 treatment days may be needed for prostate more than 150 cc.

In our practice, we did not routinely use Finasteride as a neoadjuvant treatment before TURP, however; it was evident that less bleeding was encountered with patients that underwent TURP while they were taking Finasteride as a medical treatment for their enlarged prostate. We currently started to believe that,

the routine short term use of Finasteride before TURP for large prostates may allow a safer surgery and a smoother postoperative period.

Conclusion

Finasteride is an effective drug that may be considered pre-TURP for patients with prostatic volume more than 30 cc. The duration of treatment ranges from 1- 6 weeks depending on the prostatic volume.

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