The Efficacy of T-Bet in Intraocular Pressure Reduction in Patients with Primary Open-Angle Glaucoma

Olawoye O.O, Sarimiye T.F and Ashaye A.O.

Department of Ophthalmology, College of Medicine, University of Ibadan, Nigeria and Department of Ophthalmology, University College Hospital, Ibadan, Nigeria
Corresponding author: Sarimiye T.F. E-mail: tsarimiye@yahoo.com

Introduction: Glaucoma is the second most common cause of blindness and number one cause of irreversible deterioration of vision worldwide[1]. It affects approximately 70 million people and leads to irreversible blindness in approximately 10% of those affected[2]. The only treatment that can effectively prevent the development and progression of glaucoma is reduction of intraocular pressure (IOP)[3,4]. Monotherapy is frequently insufficient for reaching the preset target IOP and thus the need for multitherapy[5]. When two drugs are required to control IOP, there are a number of potential advantages to using a fixed combination[4]. T-BET is a travoprost 0.004% – timolol 0.5% fixed combination

Aim: To report the efficacy of T-BET as a fixed combination prostaglandin-timolol anti-glaucoma medication in IOP reduction among primary open-angle glaucoma patients at the University College Hospital, Ibadan.

Methods: Newly diagnosed patients with POAG were recruited in this study. A pre-commencement of T-BET IOP measurement was performed and a repeat IOP measurement was taken 3 weeks on T-BET use. All IOP were taken between the hours of 10am and 2pm. The inclusion criteria for this study included; Open angle glaucoma (POAG, NTG, JOAG), newly diagnosed or has not been on medications in the last 4 weeks. The exclusion criteria were; previous intraocular surgeries, previous laser procedure, decline enrolment.

Results: A total of 43 eyes of 22 patients were analyzed in this study. Mean age was 57.10 (±16.46) years with a range of 18 to 80 years. Females accounted for 15 (68.18%) of the patients. Hypertension and diabetes were in 7 (31.82%) and 1 (4.55%) of the patients. A positive family history of glaucoma was in 4 (18.18%) of the patients. The mean IOP at recruitment was 26.53 (±6.65) mmHg with a range of 16 to 39mmHg. At 3 weeks on T-BET, the mean IOP was 16.07 (±4.35) mmHg and a range of 9 to 26mmHg. This reduction of IOP was statistically significant with p value of <0.01. This resulted in an average percentage drop of IOP 39.43%.Two (9.0%) patients complained of mild ocular redness as a side effect of the medication.

Discussion: In this study the significant drop in IOP of 39% is comparable with earlier studies using different brands like that of Miguel et al study[6] and Schuman JS et al study[7]. In the Miguel et al study which was a prospective multicenter, double masked, randomized trial revealed a 35.3% to 38.5% reduction in IOP in their TTFC group. They measured their IOP at 2 and 6 weeks post commencement of medication and noticed no significant further drop in IOP between the 2 weeks and 6 weeks periods of assessment. The Early Manifest Glaucoma Trial showed that for every 1 mmHg of IOP reduction was associated with approximately a 10% reduction in risk of glaucoma progression[8] and our study recorded an approximately 10 mmHg mean reduction.

Conclusion: It is suggestive from this study that the IOP drop is comparable to that achieved with other published works of TTFC and with acceptable side effect profile

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