

# GLAUCOMA COMMUNIQUE

## Double medical therapy: An efficacious and safe option in primary open-angle glaucoma patient

**Double medical therapy (DMT) is noninferior to triple medical therapy (TMT) in primary open-angle glaucoma patient, therefore DMT could be used as an alternative drug regimen in patients experiencing adverse drug reactions from using multiple anti-glaucoma eye drops.**

### Need for fixed-dose combination maximum medical therapy for glaucoma treatment

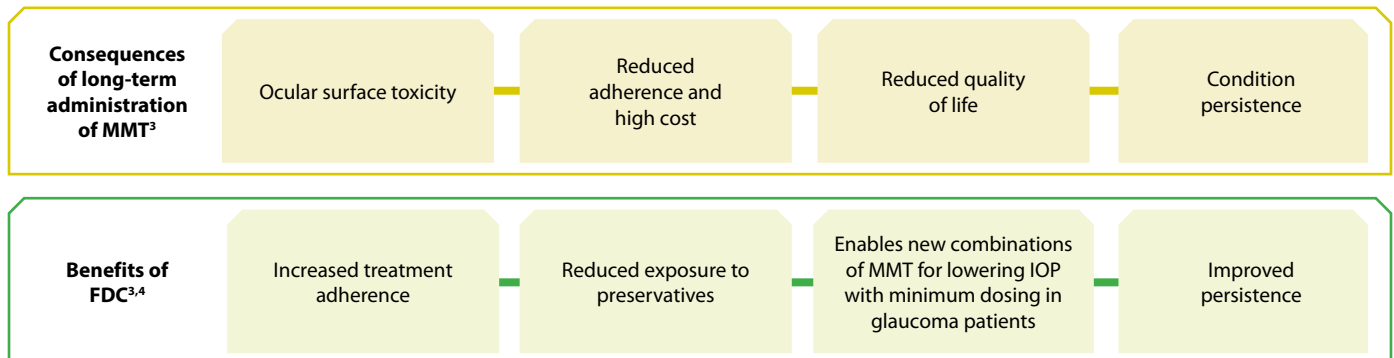
Globally, glaucoma is considered one of the major causes of irreversible blindness with a prevalence of 3.54%.<sup>1</sup> Majority of the people with glaucoma are affected by primary open-angle glaucoma (POAG). POAG has demonstrated a strong association with elevated intraocular pressure (IOP). Patients with ocular hypertension have elevated IOP levels but do not show signs of glaucomatous damage.<sup>2</sup>

Initial treatment with topical hypotensive medications to control IOP is the standard of care for POAG and ocular hypertension. Monotherapy is first considered followed by dual therapy in case of failure to achieve

target IOP reduction. In some cases, maximum medical therapy including four-drug regimens is administered to control the IOP, failure of which determines the need for surgery.<sup>3</sup>

Lack of persistence and non-adherence to long-term multiple drug therapy in chronic and asymptomatic patients could result in reduced drug effectiveness and several other consequences (Figure 1).<sup>3,4</sup> Therefore, a need for medical therapy delivering maximal therapeutic efficacy in reducing IOP with minimum adverse drug reactions (ADRs) is required.<sup>3</sup> Use of fixed-dose combination (FDC) medications improves adherence and persistence to therapy and is associated with several benefits (Figure 1).<sup>3,4</sup>

**Figure 1: Benefits of FDC over long term administration of MMT**

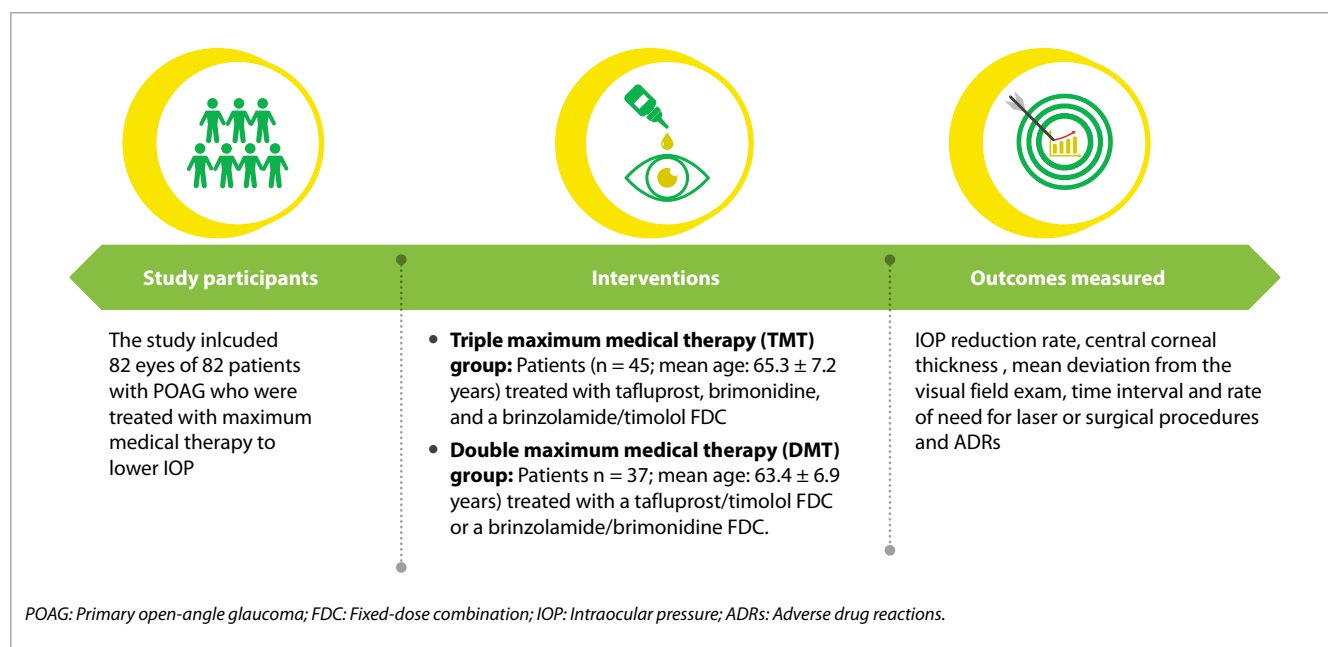


FDC: Fixed-dose combinations; MMT: Maximal medical therapy; IOP: Intraocular pressure.

## DMT non-inferior to TMT in lowering IOP among POAG patients

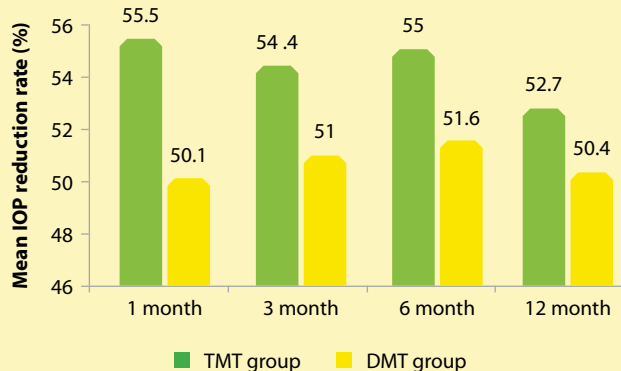


A retrospective consecutive case series study compared two maximum medical therapy combinations, analyzing their efficacy and safety in lowering IOP among POAG patients.<sup>3</sup>



## Reduction in mean IOP<sup>3</sup>

- Patients receiving TMT and DMT demonstrated statistically significant reduction in mean IOP after 12 months ( $p < 0.001$  for both) as compared to baseline.
- Though, reduction rate of mean IOP after 12 months was higher in the TMT group compared to DMT group, it was not statistically significant ( $p = 0.615$ )

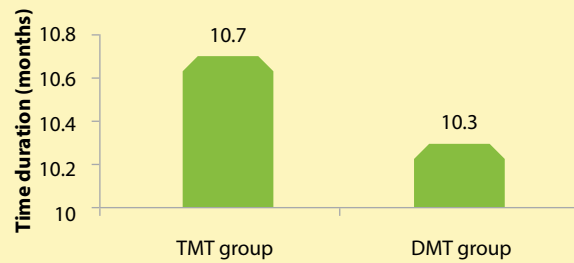


*TMT: Triple medical therapy; DMT: Double medical therapy; IOP: Intraocular pressure.*



## The time duration between beginning MMT and proceeding to the laser or surgical therapy<sup>3</sup>

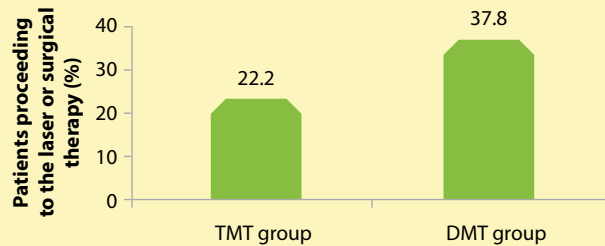
The time duration between beginning MMT and proceeding to the laser or surgical therapy in patient receiving TMT and patients receiving DMT was found to be statistically similar.



TMT: Triple medical therapy; DMT: Double medical therapy; MMT: Maximum medical therapy.

## Rate of proceeding to laser or surgical therapy<sup>3</sup>

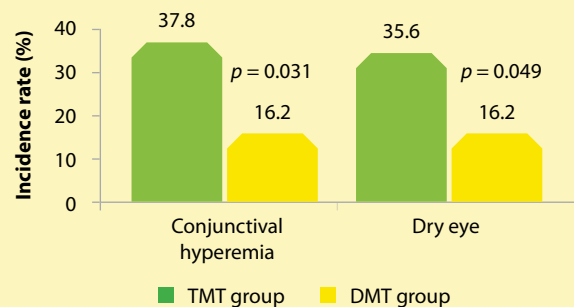
The rate of proceeding to laser or surgical therapy was higher in patients receiving DMT, compared to patients receiving TMT, which was not statistically significant.



TMT: Triple medical therapy; DMT: Double medical therapy; MMT: Maximum medical therapy.

## Adverse drug reactions<sup>3</sup>

- No serious adverse events were reported in both the groups
- The patients receiving DMT demonstrated significantly lower incidence rates of conjunctival hyperemia and dry eye, compared to patients on TMT



TMT: Triple medical therapy; DMT: Double medical therapy.

## Benefits of DMT for IOP reduction in patients with POAG

- ▶ The present study demonstrated non-inferiority of DMT compared to TMT in terms of reduction in IOP, rate of proceeding to laser or surgical therapy or the time duration between beginning therapy and proceeding to laser or surgical therapy.<sup>3</sup>
  - A similar study conducted among POAG patients also demonstrated the efficacy and safety of DMT in lowering IOP, especially in patients aged 70 years or older, compared to TMT.<sup>5</sup>
- Topical treatment with brinzolamide/brimonidine tartrate fixed combination has shown efficacy and safety in POAG patients by mean IOP reduction of >2.5 mmHg and was well tolerated in 87% of patients with no major adverse events.<sup>4</sup>
- ▶ Use of DMT was also associated with lower ADRs, thus demonstrating improvement in ocular symptoms which may be due to reduced exposure to preservatives.<sup>3</sup>
- ▶ With DMT, reduction in ADRs and use of lesser medications could be beneficial in improving patient adherence.<sup>3</sup>

### Clinical implication

The study outcomes suggest considering a switch from TMT to DMT in POAG patients with poor adherence due to ADRs to anti-glaucoma eye drops.<sup>3,4</sup>

### References

1. Young CEC, Seibold LK, Kahook MY. Cataract surgery and intraocular pressure in glaucoma. *Curr Opin Ophthalmol.* 2020;31(1):15–22.
2. Garg A, Gazzard G. Treatment choices for newly diagnosed primary open angle and ocular hypertension patients. *Eye (Lond).* 2020;34(1):60-71.
3. Joh HJ, Jin SW. Comparison of different combinations of maximum medical therapy for lowering intraocular pressure in primary open angle glaucoma: 12-month retrospective consecutive case series. *Jpn J Ophthalmol.* 2019;63(4):322-327.
4. Moosavi R, Ansari E. Brinzolamide/brimonidine fixed combination: Simplifying glaucoma treatment regimens. *Ophthalmol Ther.* 2018;7(2):397-403.
5. Wy S, Kim YK, Jeoung JW, Park KH, Ha A. Comparison of two combinations of maximum medical therapy for lowering intraocular pressure in primary open-angle glaucoma. *Korean J Ophthalmol.* 2020 Feb;34(1):19-26.

## In Open angle glaucoma and Ocular hypertension

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