EDITORIAL

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As we approach World Sight Day, observed annually on the second Thursday of October, the Indonesian Association of Ophthalmology always organizes various activities related to this day, particularly to raise awareness about visual impairment in the community. This focus is crucial because Indonesia has a significant blindness rate (3%), with cataracts remaining the main issue, however visual impairment due to cataracts can be restored through cataract surgery.[1] Glaucoma is also among the top five causes of blindness. It becomes a serious problem when someone's vision has deteriorated significantly, as vision cannot be restored even with glaucoma surgery due to severe damage to the retinal nerve fiber layers and optic disc pallor. Additionally, the number of glaucoma patients in Indonesia has increased substantially due to an aging population. Severe visual field loss might occur in people with advanced open-angle glaucoma and angle-closure glaucoma, which encroaches on central vision and eventually reduces visual acuity. Glaucoma patients often present with advanced disease in at least one eye, with severe visual field restriction usually reducing their quality of life and increasing the risk of falls and fractures. These patients are often associated with socioeconomic deprivation.[2] Guidelines from the National Institute for Health and Care Excellence (NICE) in the UK suggest that patients presenting with advanced glaucoma should be offered trabeculectomy as a primary intervention. [3] However, this suggestion does not yet have consensus in Indonesia. Even in the UK, this guidance is generally not followed due to concerns about potential sight-threatening surgical complications and a lack of evidence supporting primary surgery. It is believed that reducing intraocular pressure is the only proven effective treatment for halting the progression of glaucoma. Therefore, we reviewed the results of managing late-advanced stage primary glaucoma in Indonesian eyes after performing combined phacoemulsification and trabeculectomy to evaluate the efficacy and safety, mean intraocular pressure (IOP) reduction, and vision-threatening complications.

The medical records of Indonesian eyes with late-advanced stage primary glaucoma at JEC Eye Hospital & Clinics were retrospectively reviewed. Eyes with secondary glaucoma, pseudophakia, and retinal diseases were excluded. Data collection included IOP, visual acuity, visual field, optic disc ratio, retinal nerve fiber layer thickness, and IOP-lowering medication used preoperatively and up to 12 months postoperatively. Complications, if any, were also noted. Paired T-tests and Wilcoxon tests were utilized to analyze the results.

A total of 47 eyes from 40 subjects were analyzed in this study. The majority of the subjects were male (52.5%), with a mean age of 62.60 ± 9.95 years. Most eyes had primary open-angle glaucoma compared to primary angle-closure glaucoma (62.5% vs. 37.5%). The mean visual field deviation (dB) was -22.68 ± 6.90 at baseline and -23.31 ± 7.04 postoperatively ($p<0.35$). The mean IOP (mmHg) was 29.08 ± 11.39 at baseline and 15.11 ± 6.40 ($p<0.0001$) after 12 months of follow-up. IOP reductions of ≥ 20% were achieved in 41/47 eyes (87.2%), with a mean IOP reduction of 43%. The mean medication use decreased from 3.91 ± 1.25 medications per eye at baseline to 1.38 ± 1.21 at the last follow-up ($p<0.0001$), with a mean IOP-lowering medication reduction of 60% after 12 months of follow-up. Sixteen out of 47 eyes (34%) were medication-free at the last follow-up. No vision-threatening or wipe-out complications were observed.

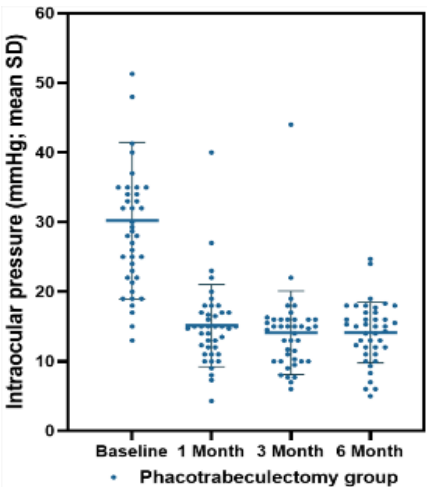

Fig 1. IOP at baseline and follow-up

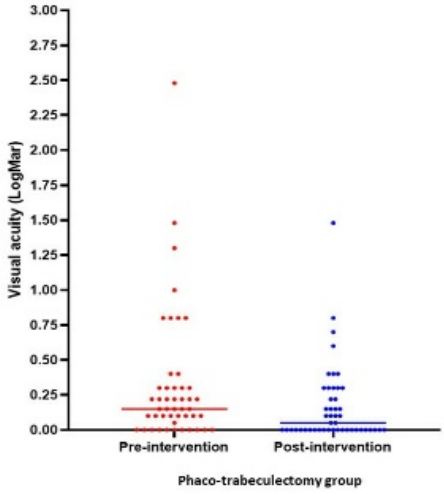

Fig 2. BCVA (in logMAR units) at baseline and follow-up

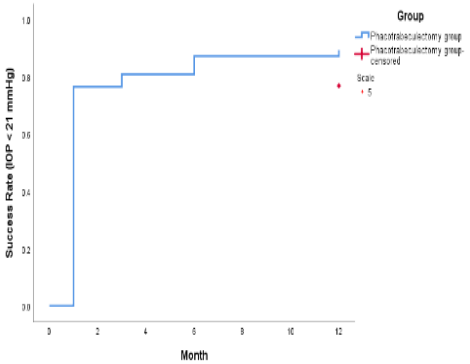

Fig 3. Kaplan-Meier survival curve of surgical outcome

Our findings indicate significant IOP reduction and increased visual acuity after combined phacoemulsification and trabeculectomy in late-advanced primary glaucoma patients, observed over 12 months of follow-up. However, after 12 months, four eyes developed reduced vision due to glaucoma progression, and one eye developed age-related macular degeneration. No unexplained loss of vision occurred immediately after surgeries, indicating no occurrence of wipe-out was found in this study. Further follow-up on retinal nerve fiber

layer damage sensitivity is crucial. During continued observation of these patients, they required at least two types of glaucoma eye drops. Another study showed no evidence of any differences between pre-post trabeculectomy compared to medication only, using a questionnaire for EQ-5D-5L, HUI-3, and GUI at 24 months in advanced glaucoma eyes. That study also reported greater IOP reduction to 12.4 (SD 5.7) mm Hg at four months, remaining around 12 mmHg in the trabeculectomy group. At 24 months, the modest deterioration in visual acuity was potentially due to the development of early cataracts in the trabeculectomy group.[3]

A sustained reduction in intraocular pressure is recognized as the most effective method of preventing further visual field loss in glaucoma eyes. For patients, maintaining their quality of life and independence is the most important outcome of their glaucoma management. Combining cataract surgery with glaucoma surgery is indeed recommended. However, other studies have shown that combined surgery can cause an inflammatory reaction leading to the failure of glaucoma surgery, so it is recommended to perform surgeries in stages.[4-7] It should be emphasized that the condition of glaucoma patients in Indonesia is usually severe. Patients often forget to use their glaucoma medication due to advanced age, difficulty in administering medication, and the high cost of glaucoma eye drops. Therefore, combined surgical management needs to be considered as it can reduce eye pressure and improve visual acuity in one procedure. If performed carefully and correctly, it is quite safe. Hopefully, our small study will provide more information on managing late-advanced primary glaucoma and can be considered by ophthalmologists.

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