Incidence of Acute Angle-Closure Glaucoma in Dalmatia, Southern Croatia

To the Editor: We read the article “Incidence of Acute Angle-Closure Glaucoma in Dalmatia, Southern Croatia” by Bojić et al (1) with great interest. Their rate was 2.9 per 100,000 per year, a figure much lower than that in South-East Asia – crude regional incidence in Hong Kong is 10.4 per 100,000 per year (2) and is 11.1 per 100,000 per year in Singapore (3). This may reflect a racial difference. On the other hand, we feel that it is important for authors to clarify whether the 4 hospitals mentioned are the sole places for treatment of glaucoma in Dalmatia. Otherwise, the accuracy of the incidence data is uncertain. In fact, the authors appeared to admit that there may be acute attack glaucoma patients being treated at other hospitals in Croatia, possibly contributed to a relatively low annual rate of acute angle closure attack.

Nowadays it is a common concept among the glaucomatologists that patients with acute angle closure do not necessarily proceed to have glaucoma, which is defined as the presence of glaucomatous optic neuropathy (4). Therefore, the incidence is in fact a combined incidence of acute primary angle closure plus acute primary angle closure glaucoma. We felt that the authors may try to refine their statistics into two separate groups as they carry different implications to prognosis as well as healthcare resources.

The authors recommended primary trabeculectomy if the attack of acute angle-closure glaucoma has lasted longer than 48 hours and peripheral anterior synechiae covered more than 50-75% of the trabecular meshwork. However, in our experience, many of these patients will have significant corneal edema after some hours of attack and accurate gonioscopy may not be possible. The choice of trabeculectomy as a primary procedure is dealt with below.

The authors mentioned that a shorter delay after the onset of symptoms (less than 2 days) could prevent more than half of the filtering surgeries and poor visual outcomes. We agree with the authors that from their data, a delay in treatment may make the acute attack more difficult to abort. However, whether this was directly associated with the poor outcome in this group of subjects remained unclear. Firstly, the outcome was not clearly defined – we believe parameters such as final intraocular pressures (IOP), cup-to-disc ratios, and visual field indices, may be equally if not more important to gauge the success of anti-glaucoma treatments. Visual acuity alone, esp. 7 years after acute attack, may be confounded by development of cataract or other ophthalmic diseases such as age-related macular degeneration. In fact, it has been shown that after adjustment for age and diabetes, trabeculectomy increased the risk of cataract formation by 78% (5). What is more, there is evidence to suggest that primary trabeculectomy is not recommendable as first-line treatment in Asian patients who do not respond to initial medical treatment for acute primary angle-closure (6,7). It is postulated that trabeculectomy will be performed with poor results in these eyes because the eye is inflamed and the IOP is high (6,7). The effect of primary trabeculectomy in the authors’ subjects remained unknown and may confound with other variables such as delay in treatment. Data on iridoplasty indicate that they may be effective for treating acute angle closure patients whose disease cannot be controlled medically after a peripheral iridotomy is performed (6). In our experience and in a randomized controlled trial, argon laser peripheral iridoplasty is significantly more effective than conventional systemic medications in reducing IOP levels in acute primary angle-closure in eyes not suitable
for immediate laser peripheral iridotomy within the first 2 hours from the initiation of treatment (8).

We command the authors’ efforts and we hope that our suggestions would help to broaden the discussion.

**Dexter YL Leung**
dennislam@cuhk.edu.hk

**Dennis S.C. Lam**
Department of Ophthalmology and Visual Sciences The Chinese University of Hong Kong Hong Kong, People’s Republic of China


**In Reply:** In a letter to the editor, Drs Leung and Lam raise some questions about the conclusions of our recent article “Incidence of acute angle-closure glaucoma in Dalmatia, Southern Croatia” (1).

We are very grateful for correctly made suggestions and criticism of our article, but we would like to point out the following: this retrospective study was done after the war in Croatia, and we wanted to investigate the problem of acute angle-closure glaucoma from the epidemiological aspect. Acute angle-closure glaucoma has a sudden onset, with pain, and is routinely treated in hospitals in Croatia. In Dalmatia, the southern part of Croatia there are no private hospitals or places that take care of acute angle-closure glaucoma except the 4 hospitals from the study. The coverage of the hospital discharge registry is therefore good for the assessment of the incidence data.

The terminology of angle-closure has a nonuniform definition of diagnosis. In a recent proposal, acute angle-closure glaucoma is defined as acute angle closure with evidence of glaucomatous optic neuropathy (2,3). In our retrospective study we used the term “angle-closure glaucoma”, which is our established terminology, previously described in textbooks and guidelines for glaucoma, and understandable to the general reader (4-6). We are currently in the phase of the adoption of the new classification of the angle closure glaucoma, and we agree with authors that the terminology of angle-closure proposed by Foster and Saw (2,3) should be used for better understanding of this disease and its incidence as well as for healthcare resources.

Iridotomy or iridectomy is the preferred definitive treatment of acute angle closure glaucoma with pupillary block component (4-6). Medical treatment only serves to lower intraocular pressure and relieve symptoms so that laser iridotomy or iridectomy is possible. Our own experience using peripheral iridoplasty in the treatment of acute angle-closure glaucoma was unsatisfactory, although in the randomized controlled trial conducted by Lam et al (7) peripheral iridoplasty was more effective than conventional therapy in treatment of acute primary angle-closure glaucoma within the first 2 hours from the initiation of treatment.

Our study was retrospective with many ophthalmologists involved in the surgery of acute glaucoma. The opinion about trabeculectomy for acute angle closure glaucoma was formed purely as the result of the data shown in this study and is by no means our recommendation. We also agree with Drs Leung and Lam that trabeculectomy nowadays is not the procedure of choice in medically unresponsive cases of acute glaucoma (8), but some surgeons choose to perform filtering surgery rather than peripheral iridectomy, if more than 75% of the angle is closed by peripheral anterior synechiae in prolonged attack (6).

Preliminary data on cataract extraction, goniosynechiolysis, and iridoplasty indicate that they may be effective for treatment of acute angle closure patients, but we need randomized trials comparing alternative treatments.

**Lovro Bojić**
lovreb@kbsplit.hr
Department of Ophthalmology Split University Hospital Split, Croatia

**Zdravko Mandić**
Department of Ophthalmology Sisters of Mercy University Hospital Zagreb, Croatia
Milan Ivanišević  
Department of Ophthalmology  
Split University Hospital  
Split, Croatia

Kajo Buçan  
Department of Ophthalmology  
Split University Hospital  
Split, Croatia

Suzana Kovačević  
Department of Ophthalmology  
Zadar General Hospital  
Zadar, Croatia

Antonela Gverović  
Department of Ophthalmology  
Dubrovnik General Hospital  
Dubrovnik, Croatia

Alenka Miletić-Jurić  
Department of Ophthalmology  
Šibenik General Hospital  
Šibenik, Croatia


