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## A Metric to Consider on the Global Accessibility of Glaucoma Surgery

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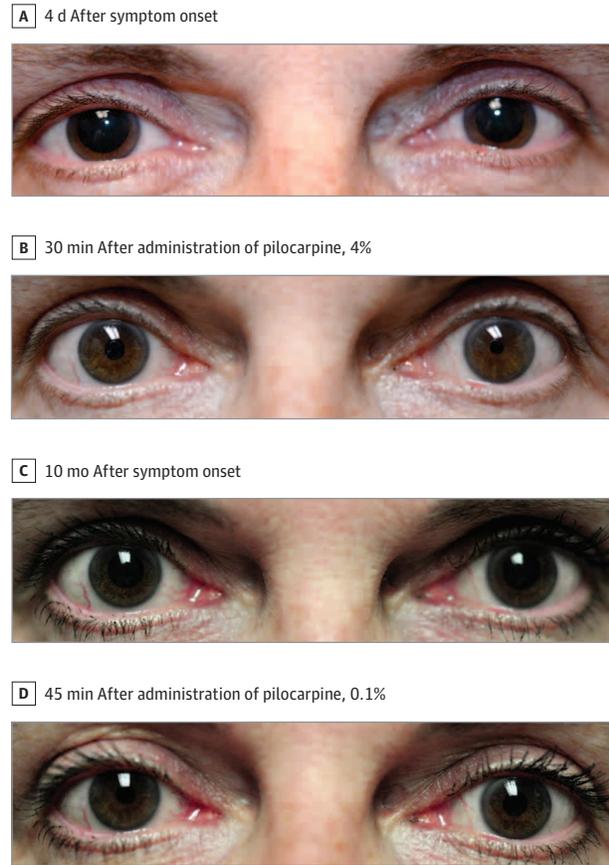
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Figure 2. Mydriasis and Response to Dilute Pilocarpine



A, The patient's pupils were 9 mm bilaterally and minimally reactive to light and accommodation 4 days after symptom onset. B, Constriction to 3 mm in the right eye and 2 mm in the left eye, 30 minutes after administration of pilocarpine, 4%. C, Ten months after symptom onset, the patient's pupils were 7 mm in the right eye and 7.5 mm in the left eye in the dark, constricting to 6 mm in the right eye and 6.5 mm in the left eye in the light and to accommodation. D, Constriction to 3 mm in the right eye and 4 mm in the left eye, 45 minutes after administration of pilocarpine, 0.1%.

exacerbated by addition of melanoma-specific vaccines. Targeted damage to the parasympathetic innervation of the eye has not been previously described, to our knowledge, and it appears to be a more long-term complication.

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## COMMENT & RESPONSE

### A Metric to Consider on the Global Accessibility of Glaucoma Surgery

**To the Editor** We read the article by Zhao et al with great interest.<sup>1</sup> The authors provide a valuable contribution to addressing the lack of epidemiologic data on the cost and accessibility of glaucoma treatments worldwide. This is a major, often neglected issue, and the authors should be praised for tackling it.

Their study highlights the extent of global disparities in medical and surgical treatments costs, especially between developed and developing countries. Their analyses of the considerable variations in the costs of medical therapies suggest that filtering surgery could be a viable option to improve long-term accessibility to glaucoma treatment in developing nations by reducing the rate of economic noncompliance.

While we fully agree with the authors' statements and understand the lack of available data regarding glaucoma therapy in developing countries, we believe their argument could have been further supported by including a global comparison of the accessibility to glaucoma surgery. In fact, the cost of glaucoma interventions is just 1 side of the global glaucoma problem, and in many parts of the world, it is compounded by a lack of qualified glaucoma surgeons. The human resource issue requires not only considerable financial resources but also many years to alleviate.

There has long been no validated tool available to objectively compare the availability of glaucoma surgeries. Therefore, several years ago, our group proposed a new metric, the glaucoma surgical rate (GSR), which is defined as the annual number of glaucoma surgeries performed in a country per million inhabitants.<sup>2</sup> We analyzed surgical data from 38 countries and found large discrepancies between developed and developing nations, with a GSR ranging from 2.9 surgeries per year per million population in Ivory Coast to 500 in Germany (a 170-fold difference). We also noted a strong positive correlation between gross domestic product per capita and GSR, suggesting a clear association of economic development with accessibility to glaucoma surgery.

In our opinion, including such a marker in the discussion would have made an even stronger point on the much-needed public health interventions required to reduce the global burden of glaucoma-associated vision loss. This marker would also be a means by which the effect of such initiatives could be measured.

As of today, no clear threshold for an ideal GSR has been defined. Thus we suspect this value will emerge as a key area for future research, because once this end point is established, its value to public health and the monitoring of its interventions will become obvious.

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**Editorial Note:** This letter was shown to the corresponding author of the original article, who declined to reply on behalf of the authors.

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## Survival of Young Patients With Posterior Uveal Melanoma

**To the Editor** Fry and coworkers<sup>1</sup> concluded in their recent article in *JAMA Ophthalmology* titled “Clinical Features, Metastasis, and Survival in Patients Younger Than 21 Years With Posterior Uveal Melanoma” that patients younger than 21 years appear to have a similar, if not worse, prognosis than patients with posterior uveal melanoma in the population overall. Their experience contradicts what is, to our knowledge, the largest published study on posterior uveal melanoma in children and young adults so far.<sup>2</sup> That study included 299 patients from 24 centers, of whom 114 were children younger than 18 years and 185 were adults aged 18 to 24 years. It found a more favorable survival than is generally found, especially among the children. The survival was 97% for children and 90% for young adults at 5 years after diagnosis and 92% for children and 80% for young adults at 10 years. Fry et al<sup>1</sup> reported a far worse survival proportion in children (69% at 5 years after diagnosis and 52% at 10 years after diagnosis). Another difference was that male patients tended to have a more favorable survival among children than female patients in the larger study (100% vs 85% at 10 years after diagnosis),<sup>2</sup> as opposed to a worse survival for male patients than female patients early on in the study by

Fry et al<sup>1</sup> (calculated to be 44% vs 90% at 5 years after diagnosis and 44% vs 60% at 10 years after diagnosis).

These 2 differences between the larger study of consecutive patients recruited mostly from national or large regional services and the article by Fry et al<sup>1</sup> might suggest a referral bias in their study. However, the difference is not explained by the distribution of tumors in the TNM stages, which appear to be very similar (reported to be 22%, 50%, and 28% in both series for stages I, II, and III, respectively; with the exception that a T2 posterior uveal melanoma cannot be stage I as tabulated by Fry et al<sup>1</sup>).

We agree with Fry et al<sup>1</sup> that young patients should continue to receive surveillance tests for more than 10 years. This is because 8 of 40 metastatic deaths in the collaborative studies occurred after 10 years from diagnosis of the primary melanoma.<sup>2</sup>

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**In Reply** We appreciate the opportunity to respond to comments submitted by Al-Jamal et al, who point out differences in the results of our study compared with theirs, which was published 3 years ago based on a multicenter survey conducted in Europe.<sup>1</sup> In particular, they question our finding that the long-term survival of young patients with posterior uveal melanoma was similar with that of older patients with comparable disease, and they speculate that referral bias may have affected our results.<sup>2</sup> This seems unlikely, given that tumor stage distribution was similar between the 2 studies. We believe that a more likely explanation is that the study design was very different between the 2 studies. A strength of their study<sup>1</sup> was its large size and inclusion of multiple centers; however, this also may have been a weakness. The quality of retrospectively collected data from multiple centers that do not adhere to uniform methodology may have inherent limitations compared with data collected from a single center using consistent practices, as was the case in our study.<sup>2</sup> It is also possible that differences in genetic background, health status, immune system, or other factors may play a role in the different study findings. Thus, although we are confident in the accuracy of our results, we do not discount the need for further investigation using high-quality clinical research methods to adjudicate the discrepancies between the 2 studies.<sup>1,2</sup> In