Author Response: Predicting and Preventing Visual Impairment and Blindness by Incorporating Individual Progression Velocity in Glaucoma Care

We thank Wesselink and Jansonius1 for their thoughtful letter and for emphasizing some important points that help in framing our study results. Our modeling exercise broadly attempted to make predictions about the proportion of treated patients, in glaucoma clinics in England, progressing at a rate of loss that could lead to long-term visual disability.2 The results were intriguing from a “real world” glaucoma service delivery perspective and show the positive consequence of treatment. We fully acknowledge that our findings relate to a population rather than informing clinical practice on an individual patient level. We now take the opportunity to expand on this and other important points.

Our data were comprised solely of patients already in clinical care and who were undergoing treatment. We do not suggest that treatment should be delayed or tapered in early glaucoma. Patients who are diagnosed early on with glaucoma likely will be treated earlier, therefore, reducing the likelihood of reaching a stage of visual impairment within their lifetime. Figure 2 in the study of Wesselink and Jansonius1 supports this argument, with the majority of eyes predicted to progress to blindness as those with advanced visual field loss from the outset, reflecting the important point that early diagnosis and detection will make the most profound difference to reducing blindness from glaucoma—this has been discussed elegantly elsewhere.3

Wesselink and Jansonius1 further make the important point that an individual patient with minimal field loss in their first visit still can be at risk of blindness. We agree. Progression rates and patterns vary greatly between patients and are unknown before follow-up. As a result, it is extremely difficult to predict if a given individual, at the point of diagnosis, will become visually impaired in their lifetime. Of course it is important to treat patients from the outset and establish progression speed and patterns vary greatly between patients and are unknown before follow-up. As a result, it is extremely difficult to predict if a given individual, at the point of diagnosis, will become visually impaired in their lifetime. Of course it is important to treat patients from the outset and establish progression speed to identify which patients are at most risk of impairment and adjust treatment accordingly. Still, our predictions suggest only a minority of elderly treated patients with early visual field loss at the point of diagnosis are at high risk of blindness in their lifetime. We still speculate that monitoring resources (not treatment resources) might be better concentrated on those with more damaged visual fields at diagnosis.

The tool described by Wesselink and Jansonius1 has real clinical utility: Experienced clinicians know that life expectancy should be an important consideration in treatment, but this chart could help with the calculation and illuminate this important point.4 We wonder if the authors could develop a chart that considers both eyes when evaluating patient prognosis, especially as looking at one eye alone often can underestimate a patient’s visual function.5

In summary, it is essential to treat glaucoma patients on an individual level and monitor them with life expectancy in mind. At the moment, certainly in England, there is a tendency to have a “one size fits all” approach to monitoring visual field loss in the diagnosed patient.6 We hope our reports motivate thoughts about optimizing the use of monitoring resources in glaucoma, especially in those patients who present with more advanced disease compared to those with little visual loss at diagnosis, or those with ocular hypertension only. We thank Wesselink and Jansonius1 for their interest in our article and providing us with the opportunity to reiterate these important messages.

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