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Published in:
Diabetes Care

DOI:
10.2337/dci15-0015

Publication date:
2015

RESPONSE TO COMMENT ON LEESE ET AL.

Progression of Diabetes Retinal Status Within Community Screening Programs and Potential Implications for Screening Intervals. Diabetes Care 2015;38:488–494

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Diabetes Care 2015;38:e209–e210 | DOI: 10.2337/dci15-0015

We thank Ziemssen et al. (1) for their comments on our recent article (2). The underlying issue is how much evidence is required before screening intervals are changed. Screening is a population-based activity, designed for maximum benefit of the population and the safety of the individual. Using a variable screening interval depending on risk could enable resources to be directed toward patients at the highest risk of visual loss.

We agree with Ziemssen et al. that some patients with clinically significant maculopathy will require treatment on referral to the ophthalmology clinic and apologize if we gave the wrong impression. We were trying to indicate that the vast majority of patients with proliferative retinopathy will require early laser treatment, while the majority of patients referred from screening with macular changes do not require any treatment as most do not have macular edema (just exudates or hemorrhage), and of those who do, many do not have clinically significant macular edema. Clearly, advances in the treatment of age-related macular degeneration and possibly diabetic macular edema are progressing quickly but that does not invalidate the conclusions of our study. The issues highlight the differences between "referable" and "treatable" eye diseases, which are well recognized within screening, and the definitions of which are actually very similar in England and Scotland when looking at the grading schemes.

The reviews quoted by Ziemssen et al. actually indicated that increasing the screening interval may be safe for low-risk patients (3,4), although Taylor-Phillips et al. (4) did not specify which of the studies they reviewed were genuinely low risk, but just accepted the authors' definitions. In addition, nonattenders at screening are at high risk of visual loss and thus would not be eligible for longer screening intervals. Also, Taylor-Phillips et al. identified three studies supporting ongoing annual screening, where one was a simulation study, one was from 1991 with different technology costs and patient profiles, and one was from Taiwan with different health care provisions. We have tried to be clear on what we define as low risk. Namely, *1*) two successive baseline screening episodes with no evidence of any retinopathy, which would thus exclude any patient who did not attend and minimize the risk of missing retinopathy due to grading errors, and *2*) screenings conducted by a robust internal and external quality-assured screening program. This addresses the heterogeneity of screening delivery and allows for further developments in the future. We also stated that low risk could be further refined if there was additional supportive evidence by using duration of diabetes, blood pressure, HbA_{1c}, and diabetes type.

It is hard to decide whether screening intervals should increase for patients in whom the risk of sight-threatening retinopathy is very low, but the decision is linked to using limited resources to improve accessibility to screening, education, new developments, and management of high-risk patients. Unfortunately, any useful randomized controlled trial to detect impaired vision is unlikely to be practical because of the large number of patients required, as described in our article. We welcome a debate as to what evidence would be required to persuade patients, patient advocates, public health physicians, diabetologists, ophthalmologists, health service managers, and others.

Duality of Interest. No potential conflicts of interest relevant to this article were reported.

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2015;38:488–494 (Letter). Diabetes Care 2015;38: e207–e208. DOI: 10.2337/dc15-1356

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