Reviewer’s report

Title: Prevalence and risk factors of superior segmental optic hypoplasia in a Korean population: the Korea National Health and Nutrition Examination Survey

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Reviewer: Klara Landau

Reviewer’s report:

In this study the authors took advantage of an existing cross-sectional survey with representative samples of the civilian non-institutionalized Korean population, the Korea National Health and Nutrition Examination Survey (KNHANES), in order to determine the prevalence of and possible risk factors for superior segmental optic hypoplasia (SSOH) in the Korean population. Over 5,600 adult survey participants from the year 2012 received a questionnaire and underwent a complete ophthalmological examination including perimetric screening and digital non-mydriatic fundus photography that was evaluated by two observers. SSOH was found in one eye of 12 subjects and in both eyes of two subjects, determining the prevalence of SSOH in the adult population in Korea to be 0.24%. Two significant associations were found: first (as expected) maternal diabetes and second, unexpectedly, paternal history of ischemic heart disease.

In this well written manuscript the study question is clearly defined and the methods used are appropriate, albeit further explanation about data collection and the reason for discarding 137 eyes from the evaluation are missing (= minor essential revision).

The data seem sound and the results support the conclusions stated by the authors. A more detailed discussion of the study limitation would be appropriate, e.g. the possibility for incorrect reporting in the interviews (= minor essential revision).

A general sentence or two about other ocular pathologies found during this study would be helpful – definitely the subtle abnormality found at the disc in the 14 patients with SSOH was not the only abnormal ocular finding in such a large screening sample (= minor essential revision).

The surprising finding of paternal history of ischemic heart disease has to be further discussed by the authors. Maternal diabetes has been known as a SSOH risk factor for decades and in previous studies has always been present DURING pregnancy, thus making a connection between maternal disease and a congenital abnormality in the offspring plausible. In contradistinction – paternal ischemic heart disease could only have played a role in the pathogenesis of SSOH in the offspring if present at conception. Thus a more detailed explanation about the way paternal IHD was evaluated in the questionnaire is needed (= major compulsory revision).
On page 4, line 11: This is an incorrect citation: Reference 1 involves 10 patients who were ALL offsprings of diabetic mothers. Please revise (= discretionary revision).

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I have no competing interests