Reviewer's report

Title: LOXL1 gene variants and their association with pseudoexfoliation glaucoma (XFG) in Spanish patients

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Reviewer: Katalin Csizsar

Reviewer's report:

The authors in this manuscript report extensive allelic data for the LOXL1 gene in a Spanish population with predominant representation of participants from the Northwestern region of Spain, and association of known risk alleles and their haplotypes with XFG in this clinically well-characterized specific population. The results significantly extend the observations of a previous genotype study of three LOXL1 SNPs in Spanish XFS and XFG subjects and emphasize differences in allelic associations with XFG within sub-regions. The complete sequence data for the LOXL1 gene revealed numerous novel and rare allelic variants in this XFG cohort that may, subsequently, provide insight into the functional significance of LOXL1 in both XFS and XFG.

Minor essential revision:

1. Page 14, line 14. Do the authors mean ‘conferring or not a risk for XFG’ instead of at-risk?
2. Page 16, line 1. Correctly ‘Loxl1 null mice’ instead of LOXL1 that is for the human gene.
3. Page 15, lines 26, 27 to page 16, lines 1, 2. There is indeed abundant evidence to show that, beyond the LOXL1 gene, there are other genetic and/or environmental factors involved in the development of XFS and XFG. However, the lack of either ocular or systemic XFS features in Loxl1 null mice does not provide support for this argument. There appears to be no evidence to indicate that any of the risk-associated allelic variants of LOXL1 would represent a null condition, or that there would be an absence or absent function of the LOXL1 protein in either XFS or XFG.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests.