Reviewer's report

Title: Identifying Subtypes of Patients with Neovascular Age-Related Macular Degeneration by Genotypic and Cardiovascular Risk Characteristics

Version: 1 Date: 4 January 2011

Reviewer: Wei Chen

Reviewer's report:

This paper used an interesting clustering approach to group patients with Neovascular Age-Related Macular Degeneration by a few clinical characteristics and disease-associated SNPs. The result is potentially useful for personalized or subgroup medicine aimed by pharmaceutical companies, leading to potentially gain of efficiency in screening and reducing of other risks (e.g. cardiovascular disease)

A few comments are followed:
1. In segmentation approach, what is the advantage of current approach comparing to traditional clustering approaches? It needs to be described more clearly.
2. In methods, is segmentation approach sensitive to the number of variables? Is the number of clusters finally joined pre-determined after stage 1 or determined on the fly in stage 2 through BIC?
3. In results, there are a big proportion of samples excluded (99 out of 352) in the analysis due to incomplete data. If only focusing on those significant characteristics in table 1, how many additional samples with complete data will be added? It might add a bit sample size to each group, while I guess the property of each group will not change too much.
4. In results, the marker in ARMS2/HTRA1 can differentiate clusters. It has been reported that AMRS2 has different effect size in large drusen, geographic atrophy and neovascular disease. Among the neovascular AMD patients in this study, how many patients also have geographic atrophy? If there is any, it would be interesting to see which clusters they belong to.

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.