Reviewer's report

Title: E-selectin gene polymorphisms are associated with essential hypertension: a case-control pilot study in Chinese

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Reviewer: Paolo Manunta

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E-selectin gene polymorphisms are associated with essential hypertension: a case-control pilot study in Chinese

The authors evaluated the association to hypertension of 3 missense mutations in e-Selectin gene in a case-control population. Two other missense SNPs in the same gene have been associated to hypertension in a German population. The authors tested a Chinese quite large population.

Major comments

1. To carry out an association study of genetic polymorphisms the correct selection of cases and controls is crucial. In the case of essential hypertension control patients aged over 60 should be selected because the disease can arise till 55-65 years of age. About the cases it is important, if possible, to select recently discovered untreated patients in order to avoid secondary effects of hypertension (cardiovascular and renal complications) on the phenotype. The age of controls selected in the present study is 51.5±8.92 years: they perfectly match the HT group but they still could become hypertensives. The comparisons between cases and these controls could be biased. It should be repeated against a control group of over 65 year normotensives. Authors may try to select a subgroup of older controls from the total control population.

2. The authors chose a priori 3 out of 14 missense SNPs on the SELE gene. Did they consider the LD among them? Are they Tag SNPs? This strategy could bring directly to positive results (functional effect) but it cannot be conclusive about the role of this gene in the disease.

3. The three SNPs tested (rs5355, rs5361, rs5368) in NT-EH groups display MAF of 5.3-4.4%, 2.1-4.9% and 28.9-26.2% respectively and were in Hardy-Weinberg equilibrium. But the MAF of rs5361 and rs5355 are quite different from those reported in NCBI database (1-2%) for Chinese population. It is due to a selection bias? Can you add a comment on this issue?

Minor comments

1. Some of the frequencies reported in Table 3 for rs5355 are wrong (allelic frequencies of male EH, female NT and EH, female dominant).
2. Please refer the mutations univocally: or always with rs number or always with letter of DNA bases.

In the Results paragraph:
1. which is the power for rs5355?
2. “the genotypes of C602A were significantly…” Change in “the genotype frequencies…”
3. “the C allelic frequency was greater..” Greater of what?
4. change “verse” with “versus” or “vs.”

In the Discussion paragraph:
1. correct “multi-genomic” with “multi-genic”
2. “However, the SNPs T1880C, C602A and T1559C had not been previously evaluated for their association with essential hypertension. In this study, these three SNPs were selected for their association with hypertension”. Please clarify.
3. “Since these two SNPs were located in extron regions” correct with “exon”.
4. “led to a change of protein residue”. Better “aminoacidic residue”. Pleased check the whole sentence, the verb seems lacking.

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

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.