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## 5'-uncoding region-1248 A>G variation of *mitofusion-2* gene is associated with level of blood lipids in hypertensive Chinese patients

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**Background:** *Mitofusin 2* (*Mfn2*) is a gene involved of a lot of cell biological process. In particular, it is very important in modulating mitochondrial metabolism with an impact on energy metabolism in vascular smooth muscle, cardiac cell, liver cell and hypothalamic neurons. We have reported 5'-uncoding region (5'-UCR)-1248 A>G variation of *Mfn2* gene is a novel variation and is associated with hypertension in Chinese. This study was aimed at investigating the association between polymorphism of 5'-UCR-1248 A>G variation and level of blood lipids in hypertensive patients.

**Methods:** 100 hypertensive patients with combined hyperlipidemia (HTH group) and 106 hypertensive patients with normal level of blood lipids (HTN group) were screened. Venous blood was drawn and DNA was extracted. Polymorphism of *Mfn2* in 5'-UCR (A-1248G) was detected by qT-PCR. Blood lipids were also measured.

**Results:** HTH and HTN groups were well matched by age and sex. Body mass index (BMI) was significantly higher in HTH group than in HTN group ( $P=0.016$ ). Compared to HTN group, HTH group has higher frequency of the genotype distribution and allelic frequency in 5'-UCR (A-1248G) of *Mfn2* gene ( $P<0.05$  for all). When sub-grouped by BMI, the genotype distribution and allelic frequency of *Mfn2* in 5'-UCR (A-1248G) in HTH group was significantly higher than in HTN group when  $BMI\geq 25$  ( $P<0.01$  for all), but not when  $BMI<25$  ( $P>0.05$  for all). Association analysis showed that only A>G variation was significantly associated with cholesterol of oxidized LDL (ox-LDL-C) and total cholesterol level  $R=-0.689$ ,  $R=-0.562$ , respectively). As to HDL-C and triglyceride, there were no significant differences between the two groups ( $P>0.05$ ).

**Conclusion:** 5'-UCR-1248 A>G variation of *Mfn2* gene may be associated with high level of ox-LDL-C and total cholesterol in hypertensive Chinese patients.

### Biography

Zuoguang Wang has completed his MD in 2008 from Capital Medical University, China. He is a Post-graduate tutor. He is responsible for several national and Beijing municipal grants. As the first author, he has published more than 60 papers in reputed journals, and 2 books. He also proposed a new theory-A four dimensional model for the mechanism of essential hypertension.

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