



Letter to the Editor

“Association between the interleukin-6-174 G/C polymorphism and risk of ischemic stroke: a meta-analysis”, published in *Genet. Mol. Res.* 14 (4): 13076-13083 (2015)

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Dear Editor,

We read the article “Association between the interleukin-6-174 G/C polymorphism and risk of ischemic stroke: a meta-analysis” by Jin et al. (2015) with great interest. The authors searched the literature for data sources to analyze the relationship between interleukin-6-174G/C and ischemic stroke. Their meticulousness in study selection and data extraction is highly commendable. Of all the studies included in this meta-analysis, we were particularly interested in the extraction of data reported by Banerjee et al. (2008). For this study, Jin et al. (2015) considered all the 176 patients in the ischemic-stroke group, although 64 of them had

hemorrhagic stroke. According to pathology, ischemic stroke and hemorrhagic stroke are two of the three main types of stroke (Rodgers, 2013). Each has several subtypes, with distinct underlying vascular pathologies; their pathogenesis has also been distinguished. Inflammation and genetic factors play an important role in the development of ischemic stroke (Gao et al., 2006; Jin et al., 2010). Moreover, ischemic stroke is characterized by thrombus, which is a complex process mainly induced by either hyper- or hypo-tension (Tong et al., 2016). On the contrary, hemorrhagic stroke is mainly attributed to various environmental and genetic risk factors, and is triggered by cerebral hemorrhage (Ikram et al., 2012). Ischemic stroke is usually accompanied by the occurrence of hemorrhagic transformation in patients, especially after thrombolytic therapy (Jickling et al., 2014). Thus, ischemic stroke and hemorrhagic stroke involve related, but different processes. Ideally, Jin et al. (2015) should have considered data for the 112 patients with ischemic stroke for their meta-analysis, instead of those for all the 176 patients. The result of this study would also have been more accurate and reliable.

Further, in the second paragraph of the discussion section in this paper, the authors stated that, “This is the first systematic study of the association between the IL6 -174 G/C polymorphism and ischemic stroke risk using meta-analysis.” However, we would like to bring to your notice that there have been a few meta-analytical studies on the association between IL6-174G/C polymorphism and ischemic stroke (Ye et al., 2012; Kumar et al., 2015). The literature included in Ye et al. (2012) meta-analysis is not as extensive as that in the study by Jin et al. (2015). The study by Kumar et al. (2015) included more relevant literatures. The results of these three studies are similar. All of them concluded that IL-6-174G/C gene polymorphisms may not be associated with an increased susceptibility to ischemic stroke. Thus, we suggest more attention should be paid to these relevant studies. Undoubtedly, a more systematic and comprehensive approach to literature searching was required in the study by Jin et al. (2015).

REFERENCES

- Banerjee I, Gupta V, Ahmed T, Faizaan M, et al. (2008). Inflammatory system gene polymorphism and the risk of stroke: a case-control study in an Indian population. *Brain Res. Bull.* 75: 158-165. <http://dx.doi.org/10.1016/j.brainresbull.2007.08.007>
- Gao X, Yang H and ZhiPing T (2006). Association studies of genetic polymorphism, environmental factors and their interaction in ischemic stroke. *Neurosci. Lett.* 398: 172-177. <http://dx.doi.org/10.1016/j.neulet.2005.12.078>
- Ikram MA, Wieberdink RG and Koudstaal PJ (2012). International epidemiology of intracerebral hemorrhage. *Curr. Atheroscler. Rep.* 14: 300-306. <http://dx.doi.org/10.1007/s11883-012-0252-1>
- Jickling GC, Liu D, Stamova B, Ander BP, et al. (2014). Hemorrhagic transformation after ischemic stroke in animals and humans. *J. Cereb. Blood Flow Metab.* 34: 185-199. <http://dx.doi.org/10.1038/jcbfm.2013.203>
- Jin R, Yang G and Li G (2010). Inflammatory mechanisms in ischemic stroke: role of inflammatory cells. *J. Leukoc. Biol.* 87: 779-789. <http://dx.doi.org/10.1189/jlb.1109766>
- Jin XF, Wang DL, Zhou Y and Xiong H (2015). Association between the interleukin-6-174 G/C polymorphism and risk of ischemic stroke: a meta-analysis. *Genet. Mol. Res.* 14: 13076-13083. <http://dx.doi.org/10.4238/2015.October.26.3>
- Kumar P, Yadav AK, Kumar A, Sagar R, et al. (2015). Association between Interleukin-6 (G174C and G572C) promoter gene polymorphisms and risk of ischaemic stroke: A meta-analysis. *Ann. Neurosci.* 22: 61-69.
- Rodgers H (2013). Stroke. *Handb. Clin. Neurol.* 110: 427-433. <http://dx.doi.org/10.1016/B978-0-444-52901-5.00036-8>
- Tong X, Wang C, Liao X, Pan Y, et al.; Thrombolysis Implementation and Monitor of Acute Ischemic Stroke in China (TIMS-China) Investigators* (2016). Smoking-thrombolysis relationship depends on ischemic stroke subtype. *Stroke* 47: 1811-1816 <http://dx.doi.org/10.1161/STROKEAHA.116.013124>.
- Ye F, Jin XQ, Chen GH, Den XL, et al. (2012). Polymorphisms of interleukin-1 and interleukin-6 genes on the risk of ischemic stroke in a meta-analysis. *Gene* 499: 61-69. <http://dx.doi.org/10.1016/j.gene.2012.02.026>