

# Diabetic Retinopathy and Cardiovascular Disease: A Literature Review [Letter]

Yuan Fang, Jing Wang, Huiyan Yang, Xi e Wu

Department of Cardiovascular Surgery, General Hospital of Ningxia Medical University, Yinchuan, Ningxia, 750004, People's Republic of China

Correspondence: Huiyan Yang; Xi e Wu, Department of Cardiovascular Surgery, General hospital of Ningxia Medical University, Yinchuan, Ningxia, 750004, People's Republic of China, Email nyfyhy@163.com; 1819897375@qq.com

## Dear editor

Recently, an original study titled “Diabetic Retinopathy and Cardiovascular Disease: A Literature Review”<sup>1</sup> was published by Yu et al in the reputable journal “Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy”. Firstly, I would like to congratulate the authors and acknowledge their successful publication.

The article concludes that the prediction of cardiovascular risk in people with diabetes can carry out targeted preventive treatment for asymptomatic patients who are at high risk of developing diabetes. The severity of DR can be used to predict the occurrence of CVD.

DR and its pathogenesis are not completely clear, but most scholars believe that the occurrence of this disease and retinal micropathy is related to damage to the vascular system.<sup>2</sup> Studies have shown that factors such as high glucose and retinal hypoxia can stimulate the expression of vascular growth factor, reduce the release of neovascularization inhibitor factor, and thus induce the formation of neovascularization.<sup>3</sup> Studies have shown that vascular endothelial growth factor (VEGF) is closely related to the formation and development of ocular neovascularization. Studies have shown that increased plasma viscosity and hypoxia are one of the main reasons leading to the high expression of VEGF.

Studies have shown<sup>4</sup> damage to blood vessels in diabetes mellitus includes hardening of blood vessels and formation of blood vessel plaques. Much of the role of diabetes in atherosclerotic disease has been learned through autopsy studies. Analysis of coronary plaque excision specimens showed that, compared with non-glycosuria control group, diabetic patients showed greater lipid-rich atherosclerosis; in addition, the area of macrophages was larger than 100%, and the incidence of thrombosis was higher.<sup>5</sup> The trend of coronary artery calcification in diabetic patients is higher, which is related to the total plaque load.

Our suspicion is that the relationship between Diabetic Retinopathy and Cardiovascular Disease needs to be further investigated.

However, the relationship between Diabetic Retinopathy and Cardiovascular Disease and severity of coronary heart disease in patients with diabetes deserves further study. Finally, long-term clinical observation of Diabetic Retinopathy may also provide more information on the prognosis of patients.

## Disclosure

The authors report no conflicts of interest in this communication.

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