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**Associations between remnant cholesterol and depression in elderly patients with type 2 diabetes****Jingjing Peng**

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**Background:** Depression is a common comorbidity in patients diagnosed with type 2 diabetes. The remnant cholesterol was originally recognized as an important contributor to the residual cardiovascular disease risk. Recent studies have also linked elevated remnant cholesterol with mental health disorders. The present study aimed to clarify the associations between remnant cholesterol level and depression in elderly patients with type 2 diabetes.

**Methods:** In this single-center retrospective case-control study, data from a total of 158 diabetic elderly patients (age  $\geq 60$  years) with depression and 316 without depression were analyzed. Depression was diagnosed by experienced psychiatrists and quantitatively assessed using the Hamilton Depression Scale-24 (HAMD24). The remnant cholesterol is derived from the standard lipid panel and calculated as total cholesterol - high-density lipoprotein cholesterol - low-density lipoprotein cholesterol. The association between remnant cholesterol with depression was evaluated with the logistic regression analysis.

**Results:** The remnant cholesterol level in those with depression was significantly higher than those without depression ( $0.69 \pm 0.09$  vs  $0.58 \pm 0.07$ ,  $P < 0.001$ ). Multivariable-adjusted logistic regression analysis indicated that every 0.01mmol/L increase in remnant cholesterol was associated with 9.7% increased risk for depression (odds ratio=1.097, 95% confidence interval 1.021-1.204). Subgroup analysis indicated that the positive association between remnant cholesterol and depression was only observed in male patients ( $P$  for interaction =0.04) and patients with a body mass index  $< 30\text{kg/m}^2$  ( $P$  for interaction =0.008).

**Conclusion:** An elevated remnant cholesterol is associated with increased risk for depression in elderly patients with type 2 diabetes, especially male patients and those with a body mass index  $< 30\text{kg/m}^2$ .

**Biography**

Jingjing Peng is a distinguished mental health expert affiliated with the Chongqing Mental Health Center in China. Renowned for her contributions to the field of psychiatry and mental health, she specializes in the diagnosis, treatment, and research of various mental disorders. Dr. Peng is deeply committed to advancing mental healthcare in China, focusing on improving patient outcomes through innovative treatment approaches and mental health awareness initiatives. Her work extends to both clinical practice and academic research, positioning her as a key figure in China's mental health landscape.