

## Association between insulin resistance and serum insulin-like growth factor 1 levels in patients with non-remitting major depressive disorder

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**Background:** Major depressive disorder (MDD) is associated with a high risk of diabetes, but the precise underlying mechanisms remain unknown. Furthermore, despite the involvement of insulin-like growth factor 1 (IGF-1) in both insulin resistance (IR) and the pathogenesis of MDD, there have been no previous investigations of the association between IGF-1 and IR in patients with MDD.

**Methods:** We enrolled 120 patients with MDD (84 patients with non-remitting and 36 patients with remitting) and 99 control participants. Blood samples were collected following an overnight fast to explore the associations of serum IGF-1 levels with homeostasis model assessment-insulin resistance (HOMA-IR) and other clinical factors.

**Results:** The serum IGF-1 levels of patients with non-remitting MDD were higher than those of controls or patients with remitting MDD ( $P=0.001$  and  $P=0.007$ , respectively). There were no significant differences in HOMA-IR among the three groups. HOMA-IR positively correlated with the serum IGF-1 levels in patients with non-remitting MDD ( $R=0.355$ ;  $P=0.001$ ), but not in controls or patients with remitting MDD. A stepwise multiple regression analysis, incorporating various clinical factors, revealed positive associations of serum IGF-1 levels and body mass index with HOMA-IR in patients with non-remitting MDD.

**Conclusions:** The serum IGF-1 levels may contribute to IR in patients with MDD who fail to achieve remission. Further investigations, including longitudinal studies, should be performed to elucidate the associations of high serum IGF-1 levels with the subsequent risks of IR and diabetes.