

Brain-derived neurotrophic factor polymorphism and aphasia after stroke

ABSTRACT

Stroke is one of the most deliberating causes of mortality and disability worldwide. Studies have implicated Val66Met polymorphism of the brain-derived neurotrophic factor (BDNF) gene as a genetic factor influencing stroke recovery. Still, the role of BDNF polymorphism in poststroke aphasia is relatively unclear. This review assesses the recent evidence on the association between the BDNF polymorphism and aphasia recovery in poststroke patients. The article highlights BDNF polymorphism characteristics, speech and language interventions delivered, and the influence of BDNF polymorphism on poststroke aphasia recovery. We conducted a literature search through PubMed and Google Scholar with the following terms: “brain derived-neurotrophic factor” and “aphasia” for original articles from January 2000 until June 2020. Out of 69 search results, a detailed selection process produced a total of 3 articles that met the eligibility criteria. All three studies included Val66Met polymorphism as the studied human BDNF gene. One of the studies demonstrated insufficient evidence to conclude that BDNF polymorphism plays a role in poststroke aphasia recovery. The remaining two studies have shown that Met allele genotype (either single or double nucleotides) was associated with poor aphasia recovery, in either acute or chronic stroke. Carriers of the Val66Met polymorphism of BDNF gave a poorer response to aphasia intervention and presented with more severe aphasia.