

# Trigeminal neuralgia relationship with depression syndrome

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## Introduction

Trigeminal neuralgia is one of the common cause of facial pain. Research has shown that about 4.3 people per 100,000 people suffer from trigeminal neuralgia (TN) pain each year [1]. Patients with TN are significantly more likely to experience signs of depression, which negatively affects the quality of life [2]. It is important to evaluate TN and depressive syndrome for more effective treatment and quality of life improvement.

## Results

Clinical studies have revealed that chronic pain as a stressful condition often causes depression and up to 85% of patients with chronic pain suffer from depression. One of the main causes of chronic pain and depression is neuroplastic changes in the brain, which are caused by ongoing molecular mechanisms: decreased monoamine neurotransmitters in the central nervous system, decreased BDNF in the blood, inflammatory factors detected in body (up to 45% of patients with chronic diseases had depression) increased gluten amount in synapses [3]. Facial pain caused by trigeminal neuralgia may be a risk factor for depression. TN can lead to a decrease in neurotransmitters (serotonin and norepinephrine), which is associated with the development of depression and anxiety disorders [2]. 2011 study has shown a statistically significantly higher incidence of depressive syndrome in patients with TN and chronic facial pain compared to patients with only atypical facial pain ( $p < 0.0001$ ). Only 1 of 30 TN patient had no symptoms of depression (3.33%) [4]. Comparing TN patients with healthy control groups, statistically significant data were obtained that patients with TN were more likely to suffer from mental illness - 2.23% of TN patients had depression ( $p < 0.01$ ) [2]. Surgical interventions for the treatment of trigeminal neuralgia revealed that patients with TN who had concomitant depressive syndrome required statistically significantly more procedures ( $P = 0.038$ ). Patients with TN who were depressed also had a higher incidence of surgical complications ( $P = 0.026$ ) [5].

## Aim

To evaluate the relationship between TN and depressive syndrome.

## Conclusions

Patients with trigeminal neuralgia are more likely to have depressive syndrome. Depressive syndrome complicates the treatment of TN. Patients with TN and depression require more procedures for treatments and are more likely to have complications after surgery interventions.

## Methods

Systematic literature review was performed in PubMed databases published between years 2010 and 2020. The keywords used: trigeminal neuralgia + depressive syndrome. This systematic analysis reporting was adhered to the PRISMA Statement. 25 potentially important articles were identified. After evaluating the titles and summaries of the articles, 2 articles were selected. An additional 3 articles were manually identified by keyword in other databases. After careful analysis of the full text, 5 articles were included in this study.

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