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## Tourette syndrom - a review of current literature

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## **ABSTRACT**

### **Introduction**

Tourette syndrome is a disorder characterized by tics. It usually begins in childhood and often remains in adulthood. Tiki is best described as body movements performed automatically excluding the patient's will. It affects boys more often than girls and is associated with attention deficit hyperactivity disorder and obsessive-compulsive disorder. The etiology of Tourette syndrome has not yet been fully clarified.

### **The aim of the study**

Review the latest literature on Tourette syndrome.

### **Material and methods**

The research was conducted using Articles by PubMed and Google Scholar on Tourette syndrome.

### **Description of the state of knowledge**

Tourette syndrome is a movement disorder most commonly found in schoolchildren. The occurrence peaks in the pre-puberty period, and half of the cases disappear in early adulthood, while the severity of occurrence is higher than commonly assumed. It is often associated with mentally concomitant diseases, mainly attention deficit hyperactivity disorder and obsessive-compulsive disorder. Given the diverse presentation, Tourette's syndrome can mimic many hyperkinetic disorders, making it difficult or delaying correct diagnosis. Treatment can be behavioral, pharmacological or surgical and is dependent on the symptoms causing the greatest dysfunction.

## Summary

Tourette syndrome can cause severe stress and worsen health-related quality of life. Often it is an embarrassing condition for patients. Treatment is multimodal, however, an important issue of treatment among patients is to undertake psychotherapy, so as not to perpetuate the tic reflex, as well as to cope with functioning in society.

**Key words:** Tourette syndrome, tics, involuntary movements

## Introduction

Tourette syndrome (TS) is the disorder most common in schoolchildren. The incidence peaks in premarital times, but half of the cases resolve in early adulthood. The frequency of this team is about 5 / 10,000 people. The disease is more common in men than in women. The incidence of the disease increases significantly in families with other types of movement disorders, as well as hyperactivity disorders or obsessive-compulsive disorders. This is the most common cause of tics that are involuntary or partially controlled, sudden, short, intermittent, repetitive movements or sounds. [1,2] Although in many cases tics can be mild and not annoying, in others they can cause physical discomfort, limit academic and professional activity, and cause social disability[3]. This syndrome can mimic other hyperkinetic states, which is important because it can cause delay or misdiagnosis.

Common motor symptoms include:

- jumping
- twirling
- eye rolling
- grimacing
- blinking
- touching objects and other people
- jerking of the head or limbs
- shoulder shrugging

Examples of vocal tics include:

- tongue clicking
- swearing
- whistling
- saying random words and phrases
- animal sounds
- repeating a sound, word or phrase
- coughing
- grunting
- throat clearing [2,3,7]

While pathogenesis at the molecular and cellular levels remains unknown, structural and functional neuroimaging studies indicate the involvement of basal nuclei and related cortico-striated-thalamic-cortical circuits as the neuroanatomical site of Tourette's syndrome[4]. Typical symptoms can be disturbed by other concomitant diseases, so therapy must be adapted to the individual needs of patients. In addition to behavioral therapy, oral medications such as alpha agonists, dopamine-depleting drugs, antipsychotics, and topiramate are used to control involuntary movements and sounds. It also seems reasonable to use botulinum toxin in muscles, which are tic generators. The last resort is the use of deep brain stimulation among patients who, despite the use of treatment, do not achieve adequate improvement[5]. Although pharmacotherapy plays an important role in the treatment of TS, the side effects of medications are common and can accumulate over time. However, keep in mind that dopamine receptor blockers have been linked to potential side effects, including sedation, weight gain, acute dystonic reactions, and tardive dyskinesia, which sometimes make diagnosis difficult. For this reason, more conservative approaches are often considered basic, including psychoeducation, behavioral interventions[3,6].

## **The aim of the study**

Review the latest literature on Tourette syndrome.

## **Material and methods**

The research was conducted using Articles by PubMed and Google Scholar on Tourette syndrome.

## **Description of the state of knowledge**

Tourette's syndrome is an incurable disease, but the severity of his disease can vary widely. The basic treatment in patients with Tourett syndrome is psychoeducation of patients, which allows to improve the patient's safety in the environment. Patients in whom the symptoms of the disease are not bothersome do not receive treatment apart from treatment. In other patients, depending on the severity, psychotherapeutic interventions are used. Among them, the most popular is cognitive-behavioral psychotherapy. Pharmacology can also be used - including neuroleptics, i.e. drugs from the group of dopamine antagonists. Children whose disease is mildly treated with clonidine and other alpha-receptor antagonists and psychostimulants - e.g. amoxetine. [5,7] Tests should be supervised by a tutor. The drug is used only in the case of very severe tics that interfere with everyday functioning.

A rare treatment is botulinum toxin management. Botulinum toxin is used in the treatment of simple motor tics and simple and complex vocal tics of laryngeal origin. One or more tics that are particularly bothersome and not amenable to pharmacotherapy are selected, for example frequent blinking resembling an eyelid spasm or throwing the head back resembling a retrocollis. It works by weakening the muscles involved in the tic. It is not a popular treatment method and patients do not experience much improvement in using it.

The disease is excluded from common symptoms patients, which are disorders that are supervised, such as tests that are supervised, hyperactivity and attention to one patient .Psychoeducation and therapy can help alleviate the symptoms of TS, reduce the feeling of stigma among patients. It is important to conduct therapy in such a way as to increase disease awareness and promote social acceptance [7]. There are studies confirming that psychotherapy combined with pharmacotherapy reduces tics as compared to pharmacological treatment alone [8].

## **Summary**

Tourette's syndrome is a chronic disease that significantly reduces the quality of life of patients. They are often stigmatized and pointed with the fingers. A better understanding of Tourette's syndrome should lead to better symptomatic and more effective pathogenesis-directed therapies. The combination of psychotherapy and pharmacotherapy plays a huge role in treatment. Education of the patient and his environment is important [6,7,8,9].

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