

Tardive Dyskinesia

What is Tardive Dyskinesia?

Tardive Dyskinesia, or TD, is one of the muscular side effects of anti-psychotic drugs, especially the older generation like haloperidol. TD does not occur until after many months or years of taking antipsychotic drugs, unlike akathisia (restlessness), dystonia (sudden and painful muscle stiffness) and Parkinsonism (tremors and slowing down of all body muscles), which can occur within hours to days of taking an antipsychotic drug. TD is primarily characterized by random movements in the tongue, lips or jaw as well as facial grimacing, movements of arms, legs, fingers and toes, or even swaying movements of the trunk or hips. TD can be quite embarrassing to the affected patient when in public. The movements disappear during sleep. They can be mild, moderate or severe.

How does an individual get TD?

Essentially, prolonged exposure to antipsychotic treatment (which is necessary for many persons who have chronic schizophrenia) is the major reason that TD occurs in an individual. Some persons get it sooner than others. The risk factors that increase the chances of developing TD are a) duration of exposure to antipsychotics (especially the older generation), b) older age, c) post-menopausal females, d) alcoholism and substance abuse, e) mental retardation and f) experiencing a lot of EPS in the acute stage of antipsychotic therapy.

The mechanism of TD is still unknown despite extensive research. However, it is generally believed that long-term blocking of dopamine D₂ receptors (which is what all antipsychotics on the market do) causes an increase in the number of D₂ receptors in the striated region of the brain (which controls muscle coordination). This "up-regulation" of D₂ receptors may cause spontaneous and random muscle contractions or movements throughout the body, but particularly in the peri-oral and facial muscles.

How many individuals currently have TD?

It is not known how many individuals currently have TD. No large scale epidemiological prevalence survey has been done. It would also change because TD can be transient or persistent, and it can be more common in some persons with risk factors than others.

However, there have been several follow-up studies of individuals who start taking antipsychotics in order to measure the annual occurrence (incidence) of TD. Eight studies in young individuals (average age 29 years) receiving the older antipsychotics showed practically the same rate of 5% of those persons develop TD every year, year after year, until eventually almost 50-60% develop TD over their lifetime. The incidence of TD is higher in older individuals (average age 65 years) where our studies have shown that TD occurs in 26% after only one year of exposure to haloperidol, which increases to 52% after two years and up to 60% after three years.

Do the newer generation atypical antipsychotics pose a lower risk of TD?

Yes, the newer atypical antipsychotics are much safer than the older generation when it comes to TD. The first year incidence of TD with risperidone, olanzapine, quetiapine, and ziprasidone in young persons about 0.5%, which is ten-fold lower than with haloperidol. Similarly, the incidence of TD with atypical antipsychotics in the first year in geriatric patients is 2.5%, which is also ten-fold lower than with haloperidol. There is also growing evidence that the incidence is even lower in subsequent years of exposure to atypicals. The problem of TD has been significantly reduced with the advent and widespread use of atypical antipsychotics.

What are the symptoms of TD and is TD reversible?

As described above, the main symptoms of TD are continuous and random muscular movements in the tongue, mouth and face, but sometimes the limbs and trunks are affected as well. Rarely, the respiration muscles may be affected resulting in grunts and even breathing difficulties. Sometimes, the legs can be so severely affected that walking becomes difficult.

It must be noted that there are many other conditions that resemble TD and must be ruled out before a diagnosis of TD is made. For example, several neurodegenerative brain diseases may cause movement disorders. Very old persons may also develop mouth and facial movements with age that may be mistaken for TD. Blepharospasm is another condition that may be mistaken for TD. It should be emphasized that a history of several months or years of antipsychotic intake must be documented before TD is even considered.

TD is often mild and reversible. The percentage of patients who develop severe or irreversible TD is quite low as a proportion of those receiving long-term antipsychotic therapy.

What should you do if you notice symptoms of TD in yourself or in a family member?

Consult a psychiatrist with an established experience in using antipsychotic drugs or a neurologist who specializes in movement disorders. That physician will take a detailed

history and conduct an examination and decide whether you have TD or something else, and will recommend the appropriate management.

The pattern and severity of TD is usually measured on a rating scale called "The Abnormal Involuntary Movement Scale", (AIMS for short). Psychiatrists generally assess patients receiving long-term antipsychotic medication for TD symptoms at least annually using the AIMS.

Are there effective treatments for TD?

There has never been a definitive, validated and widely accepted treatment for TD. Dozens of drugs have been tested over the past 30 years with mixed results at best. The atypical antipsychotic clozapine has been reported to reverse persistent TD after 6-12 months, possibly through gradual "down-regulation" of supersensitive dopamine D₂ receptors. Some preliminary reports suggest that other atypical antipsychotics may also help reverse TD.

However, given that a large majority of persons who need antipsychotic treatment are now receiving the new atypicals and given the drastically lower incidence of TD with atypical antipsychotics, the issue of developing a treatment for TD may have become a moot one. Preventing the occurrence of TD is much more preferable to treating TD.

Reviewed by Henry A. Nasrallah, MD September 2003