

# TREATMENT OF TICS IN TOURETTES SYNDROME WITH ARIPIPRAZOLE

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## ABSTRACT

We report a case of 59 year old man who was suffering from tics since the age of 5 but when he came to the services for depressive symptoms at the age of 45, he came to the attention and was diagnosed as a case of Tourettes syndrome with co morbid depression.

**Key words:** Tics, Tourettes syndrome, Aripiprazole.

## INTRODUCTION

Tourettes syndrome (TS) is characterised by involuntary motor and vocal tics and most often manifests in children and adolescents. The aetiology of TS is not known. However, evidence suggests that the pathophysiology involves an abnormality in the central dopaminergic system. In support of this hypothesis, dopamine blocking drugs (antipsychotic) show some efficacy in reduction of tics and dopaminergic agents like amphetamine worsen the tic severity in TS patients. Controlled trials have documented the efficacy of several typical antipsychotic such as haloperidol, pimozide, Sulpiride and fluphenazine for tic suppression, but these medications are limited by troublesome side effects including Parkinsonism, drowsiness, akathasia, weight gain and neuroleptic malignant syndrome.

Recently atypical antipsychotic with different pharmacological profiles have emerged as new therapeutic options in the treatment of TS with less extrapyramidal side effects. To date, several atypical antipsychotics (risperidone, olanzapine, ziprasidone and quetiapine) have been successfully used to treat TS patients<sup>1</sup>.

Overall treatment of TS with currently prescribed antipsychotics is still unsatisfactory for many patients, especially children and adolescents, having difficulty bearing the side effects.

In this scenario Aripiprazole, the dopamine system stabiliser currently used for treatment of schizophrenia<sup>2</sup> could be an alternative treatment because of a favourable side effect profile. Aripiprazole acts as a partial agonist at dopamine-2(D2) receptors in hypodopaminergic conditions and displays antagonist properties in hyperdopaminergic states, thus stabilising the dopamine imbalance leading to clinical efficacy with least side effects.

Here, we report a patient with Tourettes syndrome in whom motor tics almost completely resolved with Aripiprazole.

## CASE HISTORY

59-year-old Mr. DH was suffering from tics since the age of 5 years and came to the attention of the services only at the age of 45 for his depressive symptoms. Then he was diagnosed to have Tourettes syndrome with co morbid depression.

He had multiple motor tics comprising of facial grimaces, head jerks, shoulder shrugs and abdominal tensing with a single vocal tic of coughing. He fulfilled the criteria for Tourettes Syndrome according to ICD-10. All these symptoms were chronic in nature with classic waxing and waning picture of tourettes syndrome. His symptoms had a negative effect on his schooling and occupation. He was depressed on occasions with ideas of suicide. He was free from tics for a period of 8 years (1969-1977) when he was in Australia without any medication.

He was treated with haloperidol from 1991 to 2001 with maximum dose 50mg/day without any significant improvement. Later risperidone was tried from 2002 to May 2005 with maximum dose of 5mg/day; this could not be increased because of intolerable side effects. Tics continued to be present without significant change.

Based on the side effect profile, we tried Aripiprazole 15 mg/day in this patient from June 2005. Yale global tic severity scale score was 73 at this point in

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time. After 3 weeks of treatment there was a significant reduction in the number and frequency of tics. Yale global tic severity scale score dropped to 6. He started to socialize more and became regular and efficient in work. These effects were stable during the follow up period of 28 weeks. He has not reported any side effects from Aripiprazole .

## DISCUSSION

Though this is a single case report, this gives future direction for systematic research regarding path physiology of Tourettes and its treatment with Aripiprazole.

This preliminary observation indicates that Aripiprazole is effective in treatment of tics in tourettes with clean side effect profile. One possible explanation could be a unique mechanism of action on dopamine neurotransmitter. As Aripiprazole differs from other antipsychotics by acting as a partial agonist at the D2 receptor<sup>2</sup>. It is believed that excessive dopamine availability in nigrostratial pathway in patients with TS ,aripiprazole is likely to have antagonistic effects on dopamine neurotransmission. Unlike dopamine antagonists, aripiprazole may restore more functional levels of dopamnegic activity because its antagonistic action is dependent on the availability of dopamine itself. If so, the partial D2 antagonism of aripiprazole could also be of benefit in other disorders, such as in Tardive Dyskinesia and schizophrenia, where dopamine dysfunction is also thought to play a role.

The role of aripiprazole in movement disorder has also been validated. The improvement in symptoms of Tourette syndrome<sup>3</sup>, restless legs syndrome<sup>4</sup> and obsessive-compulsive disorder<sup>5</sup>.

The natural waxing and waning pattern of tics in Tourettes poses a major limitation to any drug treatment in Tourettes. Therefore, further well-designed controlled trials are clearly indicated to prove the efficacy of aripiprazole in the treatment of Tourettes syndrome.

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