

Primary research

Open Access

Treatment of severe neuroleptic-induced tardive torticollis

Beata J Havaki-Kontaxaki*, Vassilis P Kontaxakis, Maria M Margariti, Konstantinos G Paplos and George N Christodoulou

Address: Department of Psychiatry, University of Athens, Eginition Hospital, Athens, Greece

Email: Beata J Havaki-Kontaxaki* - bkont@cc.uoa.gr; Vassilis P Kontaxakis - bkont@eexi.gr; Maria M Margariti - mmarg@cc.uoa.gr; Konstantinos G Paplos - bkont@cc.uoa.gr; George N Christodoulou - gchrist@compulink.gr

* Corresponding author

Published: 17 October 2003

Received: 28 November 2002

Annals of General Hospital Psychiatry 2003, **2**:9

Accepted: 17 October 2003

This article is available from: <http://www.general-hospital-psychiatry.com/content/2/1/9>

© 2003 Havaki-Kontaxaki et al; licensee BioMed Central Ltd. This is an Open Access article: verbatim copying and redistribution of this article are permitted in all media for any purpose, provided this notice is preserved along with the article's original URL.

Abstract

Background: The aim of this paper is to describe a case of severe neuroleptic-induced tardive torticollis successfully treated with a combination of clozapine, clonazepam and botulinum toxin-A.

Case Report: The patient, a 30-year old man with a seven-year history of delusional disorder experienced severe right torticollis with painful tightness of the neck and elevation of the shoulder. At this time he was receiving haloperidol 20 mg, trifluoperazine 5 mg, zuclopenthixol 20 mg and biperidine 4 mg daily. The combination therapy with clozapine and clonazepam and the long-term use of botulinum toxin-A resulted in a complete remission of dystonic movements.

Conclusions: The present observations provide evidence indicating that this combination therapy may be of benefit in patients with severe neuroleptic-induced tardive torticollis.

Background

Tardive dystonia (TDt) is an uncommon complication of antipsychotic treatment characterized by twisting and sustained muscle spasms that cause repetitive movements or abnormal postures. It is a persistent and painful disorder with no satisfactory treatment. The remission rate is considered to be only 10%. TDt can affect any body area. The muscles of the head and the neck are usually affected producing retro-, latero-, ante- or torti-collis [1–3].

We here describe a patient with severe tardive torticollis successfully treated with clozapine, clonazepam and botulinum toxin A (BTX) who remains well after four years while on clozapine monotherapy.

Case report

Mr A, a 30-year-old man with a seven year history of delusional disorder was treated with a variety of neuroleptics including haloperidol, trifluoperazine, perfenazine, pipamperone, thioproperazine, zuclopenthixol, in high doses and various combinations. He experienced severe extrapyramidal symptoms and received therapy with anticholinergics for many years. Abnormal involuntary movements of his neck and head were first noticed in July 1996. At this time he was receiving haloperidol 20 mg/day, trifluoperazine 5 mg/day, zuclopenthixol 20 mg/day, biperidine 4 mg/day.

His condition progressively deteriorated. Three months later he experienced right torticollis with painful tightness of the neck and elevation of the shoulder. His axial dysto-

nia followed by dextroscoliosis was disabling, interfering with activities of daily living. He was unable to work and to drive a car. All neuroleptics were stopped. No improvement was noticed with anticholinergics and benzodiazepines. He was admitted to Eginition Hospital, Athens, in October 1997. Extensive laboratory evaluations including serum ceruloplasmine, urinary copper, CT and MRI of the brain were normal. He was diagnosed as suffering from neuroleptic induced tardive dystonia (torticollis) according to Burke et. al. Criteria [4]. Mr A. was assessed on admission regarding both his dystonic movements and his mental state using the Tsui Scale (TS) [5] and the Brief Psychiatric Rating Scale (BPRS) [6] respectively. The TS evaluates the amplitude and duration of sustained movements of the head, the presence and the severity of shoulder elevation as well as the severity and duration of tremor. The score of the scale ranges between 0 and 25. He scored 18 on the TS and 65 on the BPRS.

Because of previous reports on clozapine's beneficial effect on both psychotic symptoms and neuroleptic-induced movement side-effects including TDt [2,7-9] a trial with clozapine up to 400 mg per day began at November 1997. One month later his psychopathology improved (BPRS = 41). There was, also, a mild improvement in the dystonic movements of his neck (TS = 14). Then, clonazepam up to 3 mg per day was added to clozapine. Forty days later both his mental state and dystonic movements further improved (BPRS = 34, TS = 10). However, during the next two months his condition remained unchanged.

In April 1998, 300 units of BTX were injected locally into the right affected muscles with further substantial improvement. One month later the patient was discharged from the hospital receiving clozapine 350 mg/day and clonazepam 3 mg/day. He scored 6 on the TS and 26 on the BPRS. Because the effect of the BTX is, usually, temporary the injections were repeated every month for the next three months and every three months for the next year. There were no reports of adverse effects such as dysphagia, neck weakness, fatigue, e.t.c. During that time-period his condition further improved and his pharmacotherapy was gradually decreased.

In May 1999 he scored 3 on the TS and 19 on the BPRS. He was receiving clozapine 250 mg/day and clonazepam 2 mg/day.

Four years later the patient showed no abnormal movements and his mental state improvement was also maintained. He was working regularly and had many social relationships and activities. During that period he was receiving clozapine 200 mg/day as monotherapy.

Discussion

The treatment of TDt is very difficult. Several pharmacological or other somatic interventions have been tried with poor results. Pharmacotherapy interventions are of some benefit in only 50% of patients. Besides, only few patients have been considered to make a full recovery of TDt in a long-term follow-up examination [10]. There are reports that the atypical antipsychotic clozapine has special therapeutic effect on TDt [8-11]. The efficacy of clozapine on TDt may be due to its anti-D1 action rather to its built-in anticholinergic action [12,13]. Clozapine has higher affinity for D1 and lower affinity for D2 dopamine receptors. Trugman et al [13] proposed that repetitive stimulation of the D1 receptor by endogenous dopamine, resulting in sensitization of the D1-mediated striatal output in the presence of D2 receptor blockade, is a fundamental mechanism mediating tardive dystonia. Moreover, the combination therapy with clozapine and the antispasmodic agent clonazepam proved to be effective in some patients [14,15]. It should be noted that, there are no case reports showing improvement of TDt with other atypical antipsychotics, except three cases successfully treated with olanzapine [16-18].

Several reports of the use of BTX for the treatment of TDt have been published [19-23]. Treatment with BTX injections is considered as the foremost treatment option for TDt [3]. BTX injected into the contorted muscles causes a permanent blockage of neurotransmission at the motor endplates by inhibiting acetylcholine release from nerve endings. Most of the patients show marked to moderate benefit but their improvement is transient usually, lasting a few months [19-23].

In the case reported here, the combination therapy with clozapine and clonazepam and the long - term use of BTX resulted in a complete remission of dystonic movements. Moreover, maintenance treatment with a low dose of clozapine proved to be prophylactically effective as refers to both psychotic symptomatology and TDt.

Our observations provide evidence indicating that this combination therapy may be of benefit in patients with severe TDt. Given the persistent and disabling nature of TDt and the fact that it is usually treatment resistant, combination with clozapine, clonazepam and long-term BTX treatment appears promising. More long - term case studies need to be carried out on the usefulness of this combination as well as on the prophylactic potential of clozapine and other atypical antipsychotic drugs.

Competing Interests

None declared.

Acknowledgment

The authors thank Assoc. Prof. E. Stamboulis and Assoc. Prof. A. Elias† for their assistance in treating the patient with BTX injections.

References

1. Van Harten PN and Kahn RS: **Tardive dystonia.** *Schizophrenia Bull* 1999, **25**:741-748.
2. Kiriakakis V, Bhatia KP and Marsden CD: **The natural history of tardive dystonia: A long-term follow up of 107 cases.** *Brain* 1998, **121**:2053-2066.
3. Adityanjee , Adezibijde YA, Jampala C and Mathews T: **The current status of tardive dystonia.** *Biol Psychiatry* 1999, **45**:715-730.
4. Burke RE, Fahn S, Jankovic J, Marsden CD, Lang AE, Gollomp S and Ilson J: **Tardive dystonia : Late onset and persistent dystonia caused by antipsychotic drugs.** *Neurology* 1982, **32**:1335-1346.
5. Tsui JKC, Eisen A, Stoessel AJ, Calne S and Calne DB: **Double-blind study of botulinum toxin in spasmodic torticollis.** *Lancet* 1986, **2**:245-246.
6. Overall JE and Gohram DR: **The Brief Psychiatric Rating Scale.** *Psychol Rep* 1962, **10**:799-812.
7. Caine E, Polinsky R, Kartzinel R and Ebert M: **Trial use of clozapine for abnormal movement disorders.** *Am J Psychiatry* 1979, **136**:317-320.
8. Lieberman J, Saltz B, John C, Pollak S, Borenstein M and Kane J: **The effect of clozapine in tardive dyskinesia.** *Br J Psychiatry* 1991, **154**:503-510.
9. Adityanjee and Estrera AB: **Successful treatment of tardive dystonia with clozapine.** *Biol Psychiatry* 1996, **39**:1064-1065.
10. Lamberti JS and Bellnier T: **Clozapine and tardive dystonia.** *J Nerv Ment Dis* 1993, **181**:137-138.
11. Van Harten PN, Kamphuis DJ and Matroos GE: **Use of clozapine in tardive dystonia.** *Prog Neuro-Psychopharmacol & Biol Psychiatry* 1996, **20**:263-274.
12. Freedman J: **Clozapine treatment of psychosis in patients with tardive dystonia.** *Mov Disorders* 1994, **9**:321-324.
13. Trugman JM, Leadbetter R and Zalis ME: **Treatment of several axial tardive dystonia with clozapine: case report and hypothesis.** *Mov Disorders* 1994, **9**:441-446.
14. Black LM, Marks RC, Nierman P and Luchins DJ: **Clozapine and clonazepam in tardive dystonia.** *J Clin Psychopharmacol* 1991, **11**:268-269.
15. Shapleske J, Mckay AP and Makenna PJ: **Successful treatment of tardive dystonia with clozapine and clonazepam.** *Br J Psychiatry* 1996, **168**:516-518.
16. Littrell KH, Johnson CG, Littrell S and Peabody CD: **Marked reduction of tardive dyskinesia with olanzapine.** *Arch Gen Psychiatry* 1998, **55**:279-280.
17. Jaffe ME and Simpson GM: **Reduction of tardive dystonia with olanzapine.** *Am J Psychiatry* 1999, **156**:2016.
18. Fukui H and Murai T: **Marked improvement of Meige's Syndrome with olanzapine in a schizophrenic patient.** *J Neuropsychiatry Clin Neurosci* 2002, **14**:355-356.
19. Moore P: **Handbook of Botulinum Toxin Treatment.** Cambridge, England: Blakwell Science Ltd; 1995.
20. Tsuong D, Hermanowicz N and Rontal M: **Botulinum toxin in treatment of tardive dyskinesia syndrome.** *J Clin Psychopharmacol* 1990, **6**:438-439.
21. Kaufman DM: **Use of botulinum injections for spasmodic torticollis of tardive dystonia.** *J Neurochem Clin Neurosciences* 1994, **6**:50-53.
22. Chatterjee A, Forrest GM, Giladi N and Trosh R: **Botulinum toxin in the treatment of tardive dystonia.** *J Clin Psychopharmacol* 1997, **17**:497-498.
23. Tarsy D, Kaufman D, Sehti KD, Rivner ME, Molho E and Factor S: **An open-label study of botulinum toxin A for treatment of tardive dystonia.** *Clin Neuropharmacol* 1997, **20**:90-93.

Publish with **BioMed Central** and every scientist can read your work free of charge

"BioMed Central will be the most significant development for disseminating the results of biomedical research in our lifetime."

Sir Paul Nurse, Cancer Research UK

Your research papers will be:

- available free of charge to the entire biomedical community
- peer reviewed and published immediately upon acceptance
- cited in PubMed and archived on PubMed Central
- yours — you keep the copyright

Submit your manuscript here:
http://www.biomedcentral.com/info/publishing_adv.asp

