OCULOGYRIC CRISIS DURING TREATMENT WITH ARIPIPRAZOLE

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INTRODUCTION

Objective: We report a case of oculogyric crisis (OGC) occurring in a patient treated with aripiprazole, an atypical antipsychotic.

Background: Extrapyramidal symptoms (EPS), such as oculogyric crisis (OGC), are known side effects of neuroleptics, and less commonly other medications, such as carbamazepine, levo-dopa and atropine. These complex clinical events, first described von Economo, are characterized by paroxysmal episodes of fixed eye deviation, thought disorder, and postural and autonomic disturbances. The symptoms rarely occur with newer generation, “atypical” antipsychotics (i.e., Abilify (aripiprazole)). Aripiprazole has ideal properties for treatment of psychoses, given its partial agonist dopamine D2 and serotonin 5-HTA receptor actions, and antagonism of serotonin 5-HT1A receptors. Posture disturbance refers to its ability to stimulate D2 receptors in a hypodopaminergic environment and to block D2 receptors in a hyperdopaminergic environment. Crises of any cause can be terminated by treatment with anticholinergics.

METHODS

Design/Methods: Case presentation, including video, and review of literature. Pathophysiologic (i.e., dopaminergic) OGC mechanism will be discussed.

Case Discussion: A 26 year-old female with a history of schizophrenia has experienced frequent attacks (1-4 weekly) with uncontrollable eye blinking, followed by staring eye deviation, left and upwards. Episodes are preceded by intense anxiety, and accompanied by decreased vision, vision blurring, photophobia, as well as an overheated sensation and sweating. Attacks occur in the early afternoon, can last several minutes, and may eventually progress to a posturing crisis.

RESULTS

The following photographs and the accompanying video recording convey the clinical phenomenology of this patient’s oculogyric crises.

Clinical Features of Oculogyric Crises (Leigh et al. 1987, Schiff et al. 1999):

- Eyes usually , sometimes , rarely - Eyes usually directed away from posturing - Eyes are fixed in crisis; voluntary gaze is possible, but painful.

- Voluntary saccades are full within a restricted field - Increased in parkinsonism - Dystonic posturing of the limbs, usually severe contralateral to direction of eye movement - Held in rigid posture

- Autonomic

- Sympathetic overflow: BP, HR.

- pupillary dilation, facial flushing

- Excessive respiration, sweating, respiratory crises: tachycardia, bradycardia, resp. rhythm abnormalities, respiratory acidosis

- Thought ‘tickness’, inability to shift attention

- Behavioral excitation: restlessness, anxiety

DISCUSSION

CONCLUSIONS

- OGC is a potential complication of treatment with antipsychotic drugs.

- The occurrence of this side effect with atypical antipsychotics is very rare.

- To our knowledge, there is only one other published report of significant EPS with OGC associated with aripiprazole treatment.

- Aripiprazole likely acts as a functional D2 antagonist when activity is excessive, and as a D2 agonist when activity is not sufficient.

- A potential mechanism for this very complex clinical entity involves intralaminar and midline thalamic nuclei.

- There is no neuropsychological, neuroimaging, and neuropharmacological evidence to support aberrant synchronization of the thalamus-il lamellar complex as a mechanism underlying the oculogyric crisis.

- Vulnerability to these events may arise because of underlying (disease based) increased cholinergic innervation to the thalamus unmasked in the setting of pharmacologic dopaminergic blockade.

ACKNOWLEDGEMENTS

We thank David Linicome for his assistance with documenting and videotaping this case presentation.

REFERENCES


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