IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 14, Issue 3 Ver. VII (Mar. 2015), PP 77-79
www.iosrjournals.org

Catatonia Associated with Disulfiram Therapy following Disulfiram Ethanol Reaction

Dr. Soumitra Ghosh[1], Dr. Dhrubajyoti Bhuyan[2], Dr. R. U. Zaman[3]
[1](Associate Professor, Department of Psychiatry, Assam Medical College, Dibrugarh, Assam, India)
[2] (Assistant Professor, Department of Psychiatry, Assam Medical College, Dibrugarh, Assam, India)
[3] (Professor & Head, Department of Psychiatry, Silchar Medical College, Silchar, Assam, India)

Abstract: *Disulfiram is a deterrent agent used in the treatment of alcohol dependence syndrome. Though it is regarded as one of the most efficacious drugs, it is associated with various side effects. On the other hand catatonia is a clinical syndrome characterized by varieties of psychomotor abnormalities of retardation and excitement often seen in schizophrenia, mood disorder and other medical conditions. Here we are presenting a case report of catatonia associated with Disulfiram therapy following Disulfiram Ethanol Reaction*
Key words: *Disulfiram, Alcohol Dependence, Catatonia, Antabuse therapy, Disulfiram Ethanol Reaction*

I. Introduction:

Catatonia was predominantly regarded as a subtype of schizophrenia throughout the 20th century, and in diagnostic classification systems it was primarily associated with schizophrenia (1). Howover, Catatonic symptoms can also be seen in affective disorders (2); catatonia has in fact occasionally been observed in many general medical conditions, such as endocrinal disorders, infections, and electrolyte abnormalities (3-4); neurologic diseases (5); and various treatments (6).

The etiology of catatonia has not been clearly described. The motor symptoms of catatonia can be explained by deficiency of cortical gamma-aminobutyric acid (GABA) – the prime imhibitory neurotransmitter causing problem in basal ganglia modulation (7). This suggestion explains the therapeutic success of benzodiazepines (BZD), which increase GABA activity. Another suggested mechanism is the hyperactivity of glutamate, which is an excitatory neurotransmitter (8).

Disulfiram is an aversive agent used in the treatment of alcohol addiction or abuse .This agent inhibits acetaldehyde dehydrogenase enzyme thereby causing accumulation of acetaldehyde metabolized from alcohol. .Disulfiram also acts on the dopaminergic system. Diethyldithiocarbamate, the breakdown product of disulfiram, blocks the dopamine β-hydroxilase enzyme and thereby it inhibits the conversion of dopamine into noradrenalin and this inhibition of dopamine β-hydroxilase enzyme leads to accumulation of dopamine and may account for the neuropsychiatric side effects of Disulfiram such as delirium, paranoid conditions, lack of concentration, memory impairment, depression, ataxia, and dysarthria (9,10). In addition to these side effects, cases of catatonia induced by disulfiram have also been reported from time to time (11, 12, 13, 14). This paper presents a case of catatonia induced by disulfiram, which was thought to be a rare clinical condition which may often be difficult to diagnose but responded positively to treatment.

II. Case Report:

MRX- A 28 yr, unemployed, unmarried, Hindu Male from Middle Socioeconomic State from urban background was hospitalized for his Alcohol related behavioural problem. He was diagnosed as a case of Alcohol Dependence and was hospitalized from 27-01-13 to 19-02-13 at V.G. Hospital, Dibrugarh. Detoxification was done and was treated for alcohol withdrawal with LORAZEPAM- 6mg daily. He was then put on a DISULFIRAM 250 mg daily morning from 10-02-2013. He tolerated well and was discharged with following medication: LORAZEAM-2mg at bed time; DISULFIRAM 250mg once daily; OXCARBAMAZEPUNE 600 twice daily.

He had impulsive behavior with anger outburst so he was put OXCARBAMAZEPINE. There was no history of Epilepsy, Psychosis, Diabetes Mellitus, Hypertention. He was discharged and was doing well at home till 04-03-2013. But on 05-03-13 he suddenly started starring and developed rigidity of whole body. He had to be assisted in doing his body activities. Prior to development 5 days back he had taken 60 ml of IMF Alcohol and had flushing reaction for which he was scared but the reaction subsided spontaneously.

On 05-03-13 he was assisted to come in and mutism was there but suddenly he talked for few minutes relevantly and again became mute. On 06-03-13 he started protruding his tongue and had crying spell without any reason. There was fluctuating symptom and he refused taking food.

He was hospitalized and neurological consultation was taken. His C.T scan of Brain and EEG were normal, Electrolyte serum Na+, K+ were within normal limits. L.F.T.- SGOT – 50 IU/L, SGPT – 42 IU/l, Serum Bilirubin 0.8 mg/dl, serum Alkaline Phosphatase - 361

There was no neck rigidity, Kernig's sign and patient was afebrile. Meningitis was ruled out. On 07-03-13 he developed retention of urine, sleeplessness, so Catheterization was done. On the next day he developed Echolalia and Refusal of food. He was put a LORAZEPAM inj.

After two days he had shown marked improvement and he was recognizing people, responding to command. But he was not oriented to time, place. He started taking food.

10-03-13- he was better, he was talking orally and after removing the Catheter he was passing urine in toilet. He was oriented to time, place & person.

On 11-03-13 – he was discharged with OLANZEPINE 5mg daily and LORAZEPAM-2 mg with diagnosis of DISULFIRAM induced CATATONIA.

III. Discussion:

This paper reported a case of catatonic syndrome induced by the use of disulfiram. The patient had a history of ethanol dependence and was put on antabuse therapy with Disulfiram and patient initially tolerated the treatment for a period of 3 weeks. There are reports of developing psychotic symptoms and encephalopathy with Disulfiram therapy. Özlem Devrim Balaban, Murat İlhan Atagün, Latif Ruhşat Alpkan (2010) reported development of cognitive impairment as the first sign following administration of Disulfiram followed by paranoid symptoms before developing catatonia after 36 hours of initiation of therapy.(15) In our case the patient developed rigidity and mutism as the first symptom though there was disorientation during the course of illness. Some authors have reported itching, puffiness and hypertension following disulfiram therapy along with symptoms of catatonia. (16). However in our case no such symptom was found to be associated. Maccari et al identified following as risk factors for development of catatonia in patients receiving Disulfiram –

a. High dose of Disulfiram
b. Patient suffering from psychiatric illnesses
c. Patients with anatomical brain lesion.

However, in our case patient received only 250 mg of Dislufiram and there was no history of any other psychiatric illness or brain lesion. (17) Another important fact about our case is that catatonia was preceded by occurrence of Disulfiram –Ethanol Reaction which sudsided of its own before the development of catatonic symptoms

Benzodiazepines are considered the first option in the treatment of catatonia, while for those cases not responding sufficiently or not responding at all to BZDs, ECT can be considered(15) Inj. Lorazepam was used as the treatment of the case and at the time of discharge antipsychotic medication in the form of Olanzepine 5 mg was used along with oral Lorazepam .

IV. Conclusion:

This case report once again throws light to the fact that Catatonia can occur with Disulfiram therapy and it can occur at any time following the initiation of the therapy not necessarily be an acute side effect.

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