Delirium Tremens

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Abstract

The varied clinical manifestations and management of 14 male patients with delirium tremens (DT) have been studied. Eight patients were initially hospitalised for diseases unrelated to ethanol abuse i.e. 2 each for gun shot wound, myocardial infarction and stroke, and one each for pneumonia and gastroenteritis. One patient was going through withdrawal because of prodrome of viral hepatitis before he was hospitalised for uncontrolled agitation and delirium. Two known cases of mild essential hypertension on dietary therapy reported for agitation, abnormal behaviour, a single episode of tonic clonic seizure and hypertensive encephalopathy as they could not/did not get alcohol for 3 days. Three patients presented *denovo* with DT without concomitant illness. The other features besides delirium and hallucinations were tremulousness in 10, tachycardia in 12, fever in 3, diaphoresis in 2 and tonic clonic seizures in 4 patients. The symptoms fluctuated markedly at short intervals and 2 patients did not have any features of sympathetic overactivity. Altered hepatic biochemical parameters and ketonuria with normal blood sugar were noted in 4 and one patients respectively. Other biochemical parameters including serum electrolytes were normal. CT scan brain done for 5 patients revealed subdural haematoma in one. Cerebro spinal fluid (CSF) and EEG findings were noncontributory. All made good recovery with heavy doses of intravenous vitamin B complex, glucose and oral benzodiazepine. Short course of haloperidol was used in 2 patients. Two patients developed pancreatitis during follow up. All patients made complete recovery, and 8 patients have been followed for 8 to 12 months without relapse. The reason for hospitalisation in such cases is often unrelated to alcohol abuse; hence a detailed history of alcoholism is mandatory to identify those at risk as well as for prompt treatment and decreasing the mortality.

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Introduction

Delirium tremens (DT) - an acute psychosis which follows abstinence from alcohol - is the most severe form of acute alcohol withdrawal syndrome occurring in a chronic alcoholic. In persons who have been drinking heavily over a prolonged period, any rapid decrease in the amount of alcohol in the body is likely to produce a variety of symptoms. The withdrawal or abstinence syndrome is characterized by coarse tremor of the hands, insomnia, nausea, vomiting, psychomotor agitation, anxiety, transient visual, tactile or auditory hallucinations, alongwith increase in sweating, body temperature, heart rate, respiratory rate and blood pressure. When the symptoms of withdrawal are accompanied by a state of severe agitated confusion or delirium, sometimes associated with tactile or visual hallucinations, the diagnosis of alcohol withdrawal delirium (also called delirium tremens) is made. During withdrawal, some alcoholic patients show one or several grand mal convulsions which have been called 'rum fits'.

Chronic alcohol abusers when admitted with alcohol unrelated diseases develop the syndrome of acute alcohol withdrawal due to forced abstinence in hospital. Lack of proper history by the doctor and incorrect reporting about alcohol consumption by the patient delay the

diagnosis of DT in such circumstances. DT in such cases is usually considered only after causes of agitation related to the patient's primary diagnosis for admission are ruled out. This leads to a delay in diagnosis and more frequent occurrence of complications. In addition, the manifestations of DT are modified and/or worsened by the co-morbid conditions [3].

The study was carried out to find out clinical profile of patients with DT, especially in those admitted to hospital with diseases mainly unrelated to ethanol abuse. The presentation, biochemical profile and management were studied and analysed.

Material and Methods

This descriptive, observational, hospital-based study comprised 14 cases admitted to a large service hospital from March 1998 to March 2000. The patients included in the study were admitted to medical and surgical wards. Patients admitted to psychiatry ward for management of DT were not included in the study.

The cases selected for study were those who had classical features of DT while in hospital or those admitted with these features following alcohol withdrawal and volunteering a history of chronic alcohol abuse.

Each patient was subjected to a thorough clinical assessment including a detailed history taken from close

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friends/relatives. All relevant haematological and biochemical investigations were performed and the patients were followed up during their hospitalisation for problems encountered in management and response to treatment. CT scan head and EEG were carried out in 5 and 3 patients respectively. EEG could not be carried out in all cases because of various constraints.

Results

All the 14 patients were males and their age ranged from 33 to 56 years with the mean being 46.1 years. All the patients had been taking alcohol for an average period of 10 years and were dependent on alcohol. They were however in good general health. Of the 14, nine patients (64.2%) were initially admitted with diseases unrelated to alcohol abuse. Of these, 2 patients (21.4%) were admitted to surgical wards as cases of gunshot wounds. Two patients each were admitted with myocardial infarction and stroke, and one each with pneumonia and gastroenteritis. One patient could not consume alcohol because of prodrome of viral hepatitis and was hospitalised with uncontrolled delirium of 12 hours duration.

Of the remaining 5, three were admitted with frank DT after cessation of alcohol for 5 to 9 days with no other concomitant disorder. Two patients - known cases of mild primary hypertension on dietary therapy-were hospitalised with features of agitation, abnormal behaviour, a single episode of generalised tonic-clonic seizure and hypertensive encephalopathy. Both of these could not obtain alcohol for 6 days prior to this episode.

The symptoms fluctuated markedly at short intervals and 2 patients (14.2%) had no features of sympathetic overactivity. Of the 14 patients, 6 had delirium at onset (42.8%) and 8 (67.1%) developed frank delirium in hospital 24 to 96 hours after admission. The delirium was in the form of marked confusion in 8, aggressive behaviour in 4 and tactile hallucination in 2 cases. The other symptoms noted were tremulousness in 10 (71%), tachycardia in 12 (85%), fever in 3 patients (21.4%) and diaphoresis in 2 patients (14.2%). Two patients (14.25%) had generalised tonic clonic seizures in hospital. CSF and EEG done in 5 and 3 patients respectively were normal. CT head performed in 5 patients revealed a subdural haematoma (subsequently evacuated) in one patient.

Fig. 1 : Signs, symptoms and investigations - delirium tremens

The liver function tests i.e. serum transaminases and bilirubin were abnormal in 4 patients though only one had symptoms suggestive of viral hepatitis. One patient had persistent vomiting and ketonuria for 48 hours though his blood sugar remained normal throughout. The other details of various signs, symptoms and biochemical parameters are depicted in Fig. 1. The standard treatment used for alcohol withdrawal in our study was a combination of intravenous glucose, vitamin B supplement and benzodiazepines (chlordiazepoxide/diazepam/lorazepam). Two patients required low dose haloperidol for 2 to 3 weeks for controlling the abnormal behaviour. All the cases made a complete and uneventful recovery. Eight cases were followed up for 8-12 months, and during this period 2 developed pancreatitis in spite of not consuming alcohol.

Discussion

The clinical manifestations of ethanol withdrawal are divided into four overlapping syndromes i.e. acute alcoholic tremulousness, withdrawal seizures, alcoholic hallucination and delirium tremens. These were all noticed in varying degree in our study. Though various symptoms and signs of withdrawal may begin as early as 5 hours after decreasing the intake, the onset of DT without co-morbid condition is rare before 48 to 72 hours of cessation of alcohol. It may be delayed as long as 5 to 14 days [4,5]. In our study the period of alcohol deprivation ranged from 12 hours to 9 days.

Though the average age of alcohol dependence is about 35 years, in our study it averaged about 45 years. This could be related to good nutritional status and some form of restriction on excessive alcohol intake related to the regimental life. The concomitant illnesses as encountered in our study not only shorten the onset period of DT but also modify, mask or aggravate the presentation. In fact, most patients with DT have severe concomitant medical problems requiring immediate treatment [6]. Our cases with myocardial infarction and subsequent DT needed extra β -blockers and sedation to avoid worsening of cardiac disability due to sympathetic overactivity and agitation. Distinguishing DT from hepatic encephalopathy is usually difficult as these conditions often co-exist [7]. Our case of viral hepatitis could be labelled as having DT as after control of delirium his liver function deteriorated further for 3 weeks. Seizures could be common features in DT and hypertensive encephalopathy but in the latter, retinal changes have diagnostic value as was noted in 2 cases in our series. During withdrawal, there may be moderate hypertension due to sympathetic overactivity and this response can be aggravated in those with existing hypertension. The likelihood of developing DT is known to increase with conditions like pneumonia and gastroenteritis [3,8]. This was also noted in our study. Patients are often admitted for other problems and

develop withdrawal state in hospital due to forced abstinence. In our study 65% patients were admitted for various illnesses and only 33% were admitted primarily for DT. It is mandatory to exclude metabolic traumatic and infective disorders in patients showing features of ethanol withdrawal. Medical conditions which must be considered in differential diagnosis include hypoglycaemia, hepatic failure and diabetic ketoacidosis.

A frequency of 5% is usually mentioned for “rum fits” or withdrawal seizures. In our series we found 21% to be having seizures. This high incidence can be attributed to other co-morbid conditions which existed in these patients. Alcohol ketoacidosis usually develops when alcohol consumption is abruptly curtailed. It is usually associated with nausea, vomiting, abdominal pain, starvation and volume depletion. It can be differentiated from diabetic ketoacidosis by glucose concentration which is low or normal. It was encountered in one of our patients. Mortality due to DT in absence of concomitant diseases has decreased due to modern treatment. Yet in best centres it can be as high as 5-15% [1,2,9]. There was no mortality in our series. The ideal treatment of DT is controversial. Most clinicians use benzodiazepines with long half life like diazepam or chlorthalidopoxide. The average patient requires 25 to 50 mg of chlorthalidopoxide or 10 mg of diazepam given orally every 4-6 hours on the first day. The dosage should be decreased by 20% on successive days over a period of 3 to 5 days. Additionally, intravenous thiamine and glucose is administered. Short term antipsychotics like

haloperidol are occasionally required. They were used by us in 2 patients for 2-3 weeks to control their abnormal behaviour. Eight cases were followed up for 8-12 months, and during this period 2 developed pancreatitis despite abstaining from alcohol.

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