

## TO STUDY THE USE OF DISULFIRAM IN ALCOHOL DEPENDENCE SYNDROME (ICD 10/DSM IV CRITERIA) AT SECONDARY CARE SETTING

Anita Thakur, Shallu Dhiman\*, Jyoti Sharma

Department of Psychiatry, Zonal Hospital, Dharamsala

\* Institute of Human Behaviour and Allied Sciences, Delhi.

**Article Info:** Received 24 January 2020; Accepted 11 February 2020

**DOI:** <https://doi.org/10.32553/ijmbs.v4i2.947>

**Corresponding author:** Shallu Dhiman

**Conflict of interest:** No conflict of interest.

### Abstract

**Background:** Disulfiram blocks the enzyme aldehyde dehydrogenase (ALDH). If alcohol is present, acetaldehyde accumulates usually resulting in an unpleasant reaction, the disulfiram-ethanol reaction (DER), consisting primarily of tachycardia, flushing, nausea, and vomiting.

**Methods:** A consecutive sampling method was used (meeting inclusion criteria and willing to participate in study) twelve - month follow-up study was conducted in which 75 patients visiting Outpatient department in secondary care setting with diagnosis Alcohol dependence Syndrome (ICD 10/DSM IV criteria) received 250 mg disulfiram after consent from both patient and caregiver.

**Results:** Out of 75 patients 13(17.4%) patients completed one year of supervised disulfiram treatment and remained abstinent. Out of 62 remained abstinent, 22(29.4%) of remained abstinent and on regular treatment for 6 months. 19 (25.4%) patients relapsed after 3 months of treatment. 17 (22.4%) patients relapsed within 2 week to 2 months of treatment. Unwanted effects due to disulfiram and no response at 500 mg in one patient led to stopping of treatment in 4(5.4%) patients.

**Conclusion:** The study concludes with the role of disulfiram in the present day and long-term pharmacotherapy of alcohol dependence along with future research needs in this area.

**Keywords:** Disulfiram; Alcohol Dependence; Alcohol; Deterrent; Pharmacotherapy.

### Introduction

Disulfiram was approved by Food and Drug Administration for the treatment of alcohol dependence in 1951. It has been successfully used to treat alcoholism in compliant and supervised patients, but its use in unsupervised patient has been controversial.<sup>1-3</sup> Traditional disulfiram treatment has often been ineffective because of the failure to maintain usage. It is a unique medication that relies on psychological threat to avoid disulfiram-ethanol reactions which results in highly disagreeable pharmacological effect if alcohol is consumed

Disulfiram blocks the enzyme aldehyde dehydrogenase (ALDH). If alcohol is present, acetaldehyde accumulates<sup>4,5</sup> usually resulting in an unpleasant reaction, the disulfiram-ethanol reaction (DER), consisting primarily of tachycardia, flushing, nausea, and vomiting.<sup>4</sup> To prevent the first drink, however, the psychological or cognitive threat is thought to be dominant and active and thus dissuade use<sup>4,5,6</sup> The threat of a DER, the anticipation of negative consequences in case of alcohol use and ensuing thoughts about avoiding pain and sickness account for the drug's effectiveness<sup>7</sup>

### Methods and Findings

A prospective study was conducted on 75 patients visiting Outpatient department in secondary care setting with diagnosis Alcohol dependence Syndrome (ICD 10/DSM IV criteria).

**Sampling technique-** A consecutive sampling method was used.

**Inclusion criteria**

- Age between 18 and 65 years.
- DSM-IV criteria for alcohol dependence
- Patients were required to have a stable family environment so that the family could ensure to maximize treatment compliance and provide regular follow-up information.

**Exclusion criteria**

- Presence of other substance abuse disorders (excluding nicotine dependence).
- Presence of any co-morbid psychiatric disorder.
- Any medical condition present that would interfere with treatment compliance or be a contraindication to DSF.
- Any of the routine liver function test values more than three times above the normal value.
- Previous treatment with DSF.

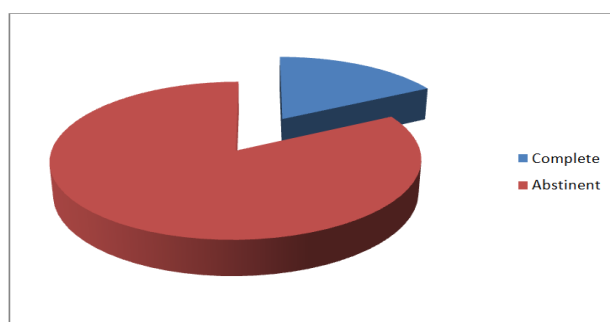
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## Results

**Table 1:** Socio-demographic profile

Gender	
Male	75(100.00%)
Female	0(0.00%)
Mean age	43.65±12.32
Range age	18-65 Yrs
Marital status	
Married	57(76.00%)
Unmarried	16(21.33%)
Separated	2(2.67%)
Religion	
Hindu	75(100.00%)
Muslim	0(0.00%)

In our study Most of patients were hindu married male, age from 18 to 65 Yrs.



**Figure 1:** Treatment wise distribution

Out of 75 patients 13(17.4%) patients completed one year of supervised disulfiram treatment and remained abstinent.

Out of 62 remained abstinent, 22(29.4%) of remained abstinent and on regular treatment for 6 months. 19 (25.4%) patients relapsed after 3 months of treatment. 17 (22.4%) patients relapsed within 2 week to 2 months of treatment. Unwanted effects due to disulfiram and no response at 500 mg in one patient led to stopping of treatment in 4(5.4%) patients.

## Discussion

Disulfiram produces an aversive reaction with ethanol, usually at a dose between 250 mg/day to 500 mg/day, although some patients may not have an aversive reaction at this level. When using disulfiram, the patient and caregiver must clearly understand the risks of using ethanol while taking the medication, and the treating

physician, patient and caregiver must understand and agree about the need for continued supervision and monitoring of side effects. It is important to understand that disulfiram is only an adjunctive therapy. Continued support, relapse prevention counseling, problem solving, supervision, and other therapeutic measures play vital role in patient management. Disulfiram is effective in reducing alcohol consumption in the compliant patient. Patients who remained abstinent for one year mostly belonged to stable family environment and were taking disulfiram under supervision of caregiver. The drug is most effective in reducing alcohol consumption in compliant and supervised patient. Prescribing disulfiram without education and counseling may not yield desired results. Disulfiram has not proven helpful in maintaining long term abstinence after stopping its use probably as the “psychological threat” is no longer perceived. Hence supervised treatment with disulfiram has effect on short-term abstinence from alcohol.<sup>8-9</sup>

## Conclusions

The study concludes with the role of disulfiram in the present day and long-term pharmacotherapy of alcohol dependence along with future research needs in this area.

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