

EFFECTS OF MEDICATION IN THE REHABILITATION OF PERSONS WITH
SUBSTANCE-INDUCED DISORDERS:
CASE STUDIES AT SPECIALIST HOSPITAL BAUCHI

PRESENTED

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Background:

Substance-related disorders simply refers to disorders related to the taking of a substance of abuse, the side effects of a medication, or the exposure to a toxin. One of these will be referred to as substance abuse which literally means substance abnormal use. The essential feature of abuse is a maladaptive pattern of substance use manifested by recurrent and significant adverse consequences related to the repeated use of substances. There may be repeated failure to fulfill major role obligations, repeated use in situations in which it is physically hazardous, multiple legal problems and a recurrent social and interpersonal problems. The substances of abuse include alcohol, amphetamines, caffeine, cannabis, cocaine, hallucinogens, inhalants, nicotine, opioids, phencyclidine (PCP) and sedatives, hypnotics, anxiolytics as well as other stimulants.

Substance-induced disorders are marked psychiatric symptoms experienced and or manifested due to the evils of substance abuse. These include substance intoxication, substance withdrawal, and disorders that could be classified in the existing classes of psychoses. The essential feature of a substance intoxication is the development of a reversible substance-specific syndrome due to the recent ingestion of (or exposure to) a substance. The clinically significant maladaptive behavioural (or psychological) changes associated

with intoxication are due to the direct physiological effects of the substance on the central nervous system and develop during or shortly after use of the substance. The essential feature of substance withdrawal is the development of a substance-specific maladaptive behavioural change, with physiological and cognitive concomitants, that is due to the cessation (or reduction in) heavy and prolonged substance use. The substance-specific syndrome causes clinically significant distress or impairment in social, occupational and other important areas of functioning. Substance-induced disorders cause a variety of symptoms that are characteristics of other mental disorders.

The persons with Substance-induced disorders are people who experience and or manifest psychiatric symptoms due to substance abuse, intoxication, withdrawal and the likes. Hence, analysis of the logic underlying their biological intervention is a valuable aid to improving biobehavioral research and practice (Schwartz et al, 1978). This position concurs with and is in pleasant support of the premise upon which the discourse before us is hinged. Such a concise literature may only be adjudged precise when a brief mention is made on treatment modalities by way of review.

Treatment Modalities:

The evidence-based treatment modalities for substance-induced disorders could be categorized into psychosocial

approach and medical approach as the case may be. The therapeutic interventions in psychosocial approach include:

- (a) Alcohol Anonymous
- (b) Counselling and Psychotherapy
- (c) Group Therapy
- (d) Occupational Therapy

While the interventions of medical approach include:

- (a) Alcohol Deterrent Therapy
- (b) Pharmacotherapies;
 - Substitution therapy.
 - Replacement therapy.

Alcohol Deterrent Therapy:

Alcohol deterrent therapy uses disulfiram (antabuse) to deter those with disorders due to alcoholism to cease drinking. The presence of disulfiram in the body makes one to hate alcohol because of the unwanted interaction effects. The drug inhibits enzyme aldehyde dehydrogenase thereby blocking the oxidation of alcohol at the stage when acetaldehyde is converted to acetate. This results in an accumulation of acetaldehyde in the blood which is thought to produce disulfiram-alcohol reaction. The reaction varies according to the sensitivity of the individual and how much alcohol was ingested. Symptoms of disulfiram-alcohol reaction can occur within 5-10 minutes of alcohol ingestion. Such syndrome of symptoms can produce a good deal of discomfort and can even result to death if the blood alcohol level is high.

Pharmacotherapies:

The Pharmacotherapeutic principles of treating substance-induced disorders are two-fold, thus substitution therapy, and replacement therapy which are better appreciated if highlighted simultaneously.

Benzodiazepines are the most widely used group of drugs for substitution therapy in alcohol withdrawal. Chlordiazepoxide (Librium), oxazepam (serax), and Diazepam (Velium) are most commonly used agents. The approach is to start with relatively high doses and reduce the dosage by 20-25 percent each day until withdrawal is complete. In persons with co-occurring liver disease, the shorter-acting benzodiazepine (oxazepam) is more appropriate because the longer-acting are problematic in this case. Certain anticonvulsant (Phenytoin, Phenobarbital, or magnesium sulfate) medication could manage withdrawal seizures, if intravenous diazepam or lorazepam (ativan) failed (Bennett and Woolf, 1991). Multivitamin and thiamine medication is common protocol in replacement therapy. Thiamine which is required to prevent neuropathy, confusion and encephalopathy will be unceremoniously deficient in chronic alcoholics.

Opioids include substances such as heroin, morphine, opium, meperidine, codeine and methadone. Withdrawal symptoms begin within 8-12 hours after the last opioid dose and become most intense by 36-48 hours (Benneth & Woolf, 1991). The acute phase of withdrawal is over approximately 10 days

while irritability and restlessness may persist for 2-3 months. Opioid intoxication is treated with narcotic antagonists such as naloxone (narcan), nalorphine (nalline), or levallorphan (lorphan). Withdrawal therapy includes rest, adequate nutritional support and methadone substitution. Clonidine (catapres) is non-addicting and can serve as a bridge to enable staying opiate-free long enough to initiate naltrexone (trexane) therapy, which is used to facilitate termination of methadone maintenance (Bennett & Woolf 1991).

Substitution therapy for CNS depressants withdrawal (particularly barbiturates) is commonly the long-acting barbiturate Phenobarbital (Luminal). The required dosage is given and will gradually be decreased by 30mg/day, when stabilization is achieved, until withdrawal is complete. Long acting benzodiazepines are commonly used for substitution therapy when the abused substance is a non-barbiturate CNS depressant (Bennett and Woolf, 1991).

Treatment of stimulant intoxication usually begins with minor tranquilizers (chloridiazepoxide) and progresses to major tranquilizers (Haloperidol). Severe hypertension could be treated with intravenous phentolamine (regitine) while repeated seizures are treated with intravenous diazepam. Treatment of withdrawal from stimulants is aimed at reducing drug craving and managing severe depression. While a conducive environment is created, free of anxiety and suicide, the tricyclic antidepressants such as desipramine (norpramine) could treat the symptoms of cocaine. Hallucinogens and

cannabinols are treated with benzodiazepines (Diazepam or chlordiazepoxide) to prevent harm to self or others by the patient. In case of psychotic reactions, phenothiazine or haloperidol will be most appropriate (Townsend 1999, Bennett & Woolf 1991).

Purpose of the Study:

Substance abuse and substance – induced disorders pose a great deal of challenge to stakeholders and the society at large. Hence, Lambo (1996) believed that “ we are still far from achieving successes in conquering socially-induced and psychologically-based disease which have greater and more disastrous impact on the fabric of our contemporary society as well as on individuals”. Considering the background of this study and the brief literature reviewed herein, it is not out of place to explore much more about the existing accessible medication for substance-induced disorders. Moreso that most of the medicinal substances reviewed in the preceding literature might not be readily available or accessible to meet the need of certain legitimate consumers. Hence, this study was designed to investigate the effect of carbamazepine and antipsychotics plus multivitamins medication in the rehabilitation of persons with substance-induced disorders.

Methods

Study Setting & Population:

The study site, Specialist Hospital Bauchi, is a tertiary health institution with 850 bed-capacity. Psychiatric department of the hospital is one of the treatment centers for substance-induced disorders. During the period of this study, 10 percent of the total service-users on the facility were psychiatric inpatients. About 48 percent (representing 206) of the psychiatric inpatients were persons with substance induced disorders.

Participants:

The 206 persons hospitalized during the period of study formed the study participants. 95 percent of them aged 16-30 while five percent were within 30-41 years of age. Only, one percent of the total participants were female while 99 percent were male.

The substances so far abused with the corresponding rate of participants include Alcohol (N=2), Amphetamine (N=2), Cannabis (N=21), other stimulants (N=97), other depressants (N=80) and inhalants (N=4) as from January 2007-2008 June.

Instruments/Apparatus:

Identification and secondary analysis of existing data were the basis of initial assessment. A modified Core Data for Drug Treatment reporting System, which is an indicator data

collection form, was the instrument used in obtaining appropriate data for this clinical study.

Design and Procedure:

The 18-month clinical case studies have been designed to explore how the independent variable (medication) affect the dependent variable (substance-induced disorders).

The procedure starts, during admission process, by systematic history taking and mental status examination. As soon as any form of substance –induced disorder have been diagnosed, the clinical case study of the individual patient commenced accordingly.

Medications such as carbamazepine, haloperidol, chlorpromazine and multivitamins were prescribed and administered according to the individual patient's need. Such need were defined in terms of the nature of substances abused, severity of the disorder, medical status, age and personality of the person being studied.

Careful observation and continuous evaluation during and after the administration of such medication formed the procedural framework of the study. The oral medication dosages include:

- (a) Carbamazepine 200mg – 600mg daily in divided dose.
- (b) Haloperidol 5mg – 80mg daily in divided dose.
- (c) Chlorpromazine 100mg – 1000mg daily in divided dose.

These medicinal substances were periodically complemented with certain multivitamins as the need arises. Neurobion and related agents have been used in this case.

Oral Benzhexol 5mg accompanied each single or combined doses of the above mentioned drugs. Benzhexol is very necessary with antipsychotic medication whereas the multivitamins depended on the need of individual persons.

Parenteral medications were more beneficial as the starting dose of medication for chronic as well as extremely severe cases. It also aided maintenance medication in case of questionable compliance with oral regimens.

Having had such medications as an inpatient, the individual patients who recovered reasonably were discharged on maintenance dose, to be taken at home. The least stay as an inpatient was two weeks while the longest stay was two months during the study period.

Identification and secondary analysis of existing data were used in eliciting information that could not be obtained first-hand. A modified version of the ‘Core Data for Drug Treatment Reporting System’ enabled the study to reveal the effectiveness of such medication in substance-induced disorders. As an indicator data collection form, it gave an insight on treatment contact details, socio-demographic information, types and consequences of the substances abused, medication compliance and outcome of treatment.

Results

After the 18 month study period, it was established that 70 percent of the inpatients fully recovered and were discharged without any repulse. 20 percent experienced remissions and relapses while the remaining 10 percent were non-compliant to medication or treatments. Out of the non-compliant patients, 2% were referred to the rehabilitation unit of National Drug Law Enforcement Agency. The remaining 8% were unfortunately without any remedy, they remained as nuisance in the society.

Discussions

Medication still remains crucial in the treatment of substances-induced disorders. The result of this study lend credence to the effects of carbamazepine and antipsychotic medication by facilitating recovery from the disorders. A case in view was the lady (aged 24) diagnosed with severe substance-induced disorder. She got into abusing the substances to enable coping up and to compensate for her glaring deficiencies in both social and academic life. Her symptoms were characterized by agitation, aimless wandering, exhibitionism, hallucination and restlessness. While taking carbamazepine, chlorpromazine, haloperidol, benzhexol and multivitamins as in-patient, she recovered fully and was discharged after just two weeks hospitalization. The lady continued on maintenance dose for 10 months at home and have been living medication free for the past seven months now without any relapse. Such finding have

been in harmony with clinical trials and other evidence-based studies earlier conducted by experts in drug field.

Carbamazepine Indications:

According to controlled clinical trials, carbamazepine has been shown to be effective in the treatment of psychomotor and grandmal seizures as well as in trigeminal neuralgia. It relieves the pain associated with trigeminal neuralgia often within 24-48 hours. Beneficial results have also been reported in glossopharyngeal neuralgia. Carbamazepine have been discovered highly effective in mania, bipolar disorders and epilepsy. The evidence supporting the efficacy of carbamazepine as an anticonvulsant was derived from active drug controlled studies that enrolled patients with the following types:

- Partial seizures with complex symptomatology (psychomotor and temporal lobe). Patients with these seizures appear to show greater improvement than those with other types.
- Generalised tonic-clonic seizures (grandmal).
- Mixed seizure patterns with one or both of the above.

The Antipsychotics:

The term “antipsychotic” describes a group of drugs used mainly for treating psychotic disorders (such as schizophrenia, mania and others) or agitated states. Such drugs are also referred to as neuroleptics which connotes their capacity to affect several integrating systems of the brain. Antipsychotic drugs produce a specific improvement in the mood and

behaviour of psychotic patients, without excessive sedation and without causing addiction. They interfere with normal amine transmission in the brain and may produce extrapyramidal symptoms and signs. The four classes of antipsychotic drugs are phenothiazine derivatives, thioxanthene derivatives, butyrophenone derivatives and miscellaneous structure. Of particular interest in this discussion are chlorpromazine and haloperidol as antipsychotic drugs.

Chlorpromazine Indication:

Chlorpromazine is a neuroleptic in aliphatic family of phenothiazine derivatives. It is well absorbed when given orally, but there is a significant “first-pass metabolism” which results in very low plasma concentrations of the under-changed drug. The duration of drug action is of the order of 6-8 hours. Chlorpromazine have been found to be exerting both calming and somewhat sedating effect. It has significant effect in schizophrenia and related psychoses as well as in nausea and vomiting of terminal illness. Chlorpromazine have secondary effect of improving appetite and other negligible advantages to the patient.

Haloperidol Indication:

Haloperidol is a butyrophenone derivative with antipsychotic properties that has been considered particularly effective in the management of hyperactivity, agitation and mania. It is an effective neuroleptic and also possesses

antiemetic properties. It has a marked tendency to provoke extrapyramidal effects and have relatively weak alpha-adrenolytic properties. It may also exhibit hypothermic and anorexiatic effects and potentiate the action of barbiturates, general anaesthetics, and other CNS depressant drugs. The peak plasma level of Haloperidol occur within 2-8 hours of oral dosing and then after just 20 minutes of intramuscular injection. The long-acting parenteral Haloperidol are antipsychotics intended for use in the management of patients requiring prolonged therapy as in the case of chronic schizophrenia.

Haloperidol is a more potent dopamine antagonist as well as less potent receptor antagonist and have only weak atropine-like activity. It acts by blocking the post-synaptic dopamine receptors in the brain. The indications also include dementia, oligophrenia, psychopathy, alcoholism, delusion, hallucinations, acute confusion and aggressiveness.

Multivitamins:

The multivitamins are significant for nourishing the brain. Neurotransmitters and other structures in the brain system need nourishment to facilitate recovery and maintain optimal functioning. Drugs such as Neurobion, vitamin B Complex and other related ones are of great importance in this case.

Benzhexol Indication:

Benzhexol is an antidote to antipsychotic drugs. It is classified under the drugs affecting brain cholinergic system, as a central anticholinergic agent. Benzhexol (Artane) is essential in the case of extrapyramidal syndrome induced by phenothiazines and reserpines. It is used in the treatment of Parkinson's disease.

Having meticulously discussed the carbamazepine, haloperidol, chlorpromazine and a brief highlight on multivitamins as well as benzhexol, the relevance of medication in treating substance-induced disorders need not be over-emphasized. However, extra care must be taken to avoid the evils of such medicinal substances which would equally turn to be acts of substance abuse. A high degree of professionalism is needed in biological interventions or drug therapies just as in the case in Psychosocial interventions.

The need to treat and rehabilitate persons with substance-induced disorders is obvious and cogent because there will be no meaningful social development if such social cancer is left untreated. Hence, mental health care oughts to keep improving day by day towards facilitating holistic well being and positive human dignity. Ensuring a humane society where drugs and mental health promotes economy and social development should be the concern of professionals, governments and other stakeholders. Don't abuse substances, join in preventing substances abuse, treat and rehabilitate persons with substance-induced disorders" (Gandi J.C., 2008).

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