A Place for Antabuse — Dr MH Cassimjee

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Curriculum vitae

Dr Cassimjee has been in active Family Practice for the last 18 years. In January 1991 he departed from active Family Practice to enter the academic world, having accepted the full time position of Senior Family Practitioner/Lecturer in the sub-department of Family Practice/Primary Care in Community Health, at the University of Natal Medical School. As an executive member of the Natal inland branch of the academy of Family Practice/Primary Care he is convenor of the committee for research and continuing medical education. His personal interest is in the management of trauma and emergency medicine, pharmacology and the legal issues relating to dispensing by doctors in South Africa.

Summary

Antabuse is the best drug available to GPs in treating their many alcohol-dependent patients, and many of the danger stories and opposition to it, is purely ideological. As part of a treatment-programme, under adequate supervision and control, this is a very useful drug for those who do not respond well to conventional programmes. The indications for it, reaction to it and the contra-indications are all considered.

S Afr Fam Pract 1991; 12: 227-9

KEYWORDS:
Disulfiram; Tetraethylthiurame Disulfide; Alcohol drinking; Drug Evaluation.

Antabuse or disulfiram (tetraethyl thiuram disulfide) has a valuable role in the treatment of chronic alcoholism, but it is commonly seen as either a complete cure or as a drug too risky to use. However if it is used from a basis of knowledge under conditions of control, disulfiram can be used successfully as part of a wider treatment or programme to break addiction to alcohol.

Disulfiram had humble beginnings. It was used as an antioxidant in the rubber industry, where workers exposed to disulfiram developed a hypersensitivity to ethanol. It was up to two Danish physicians, Hald and Jacobsen, to put disulfiram on the map. They took the chemical, while investigating its potential anthelmintic activity, and became ill at a cocktail party. Quick to realise the chemical had altered their response to alcohol, they began a series of studies which provided the basis for its use in treating chronic alcoholism today.

Its current popular image as the absolute cure for alcohol dependance, rather than as an aid in treatment, owes much to misguided media statements - and is certainly not the manufacturer's claim.

Experimental

Indeed, disulfiram implants are not favoured for routine use. It does not have the approval of the SA Medicines Control Council and may only be used experimentally.[2] Adequate supervision and control is frequently abandoned, resulting in uncontrolled alcohol-disulfiram reactions. As a "foreign body", its use often leads to "sepsis" as a result of "rejection reaction". Further, bio-availability of implants is erratic.

Indications

Many patients in fact do well without administration of disulfiram.[11]

That said, however, it should be routinely considered as an additional help for those who do not respond well to conventional programmes. It is indicated for first-time patients facing situations which pose an early relapse risk. These are the six D's:[3] divorce, dismissal, debt, detention, de-housing and death.

Ten percent (10%) of patients seen in General Practice are suffering from alcohol-related problems, and the properly supervised administration of antabuse is one of the very few methods available to the practitioner to stop their drinking pattern and to ensure prolonged alcohol-free stabilisation. During this treatment,

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necessary supportive counselling, psychotherapy and family therapy can be successfully applied. Although antabuse does not remove the craving for alcohol, the patient knows that if he is to avoid the devastating disulfiram-alcohol reaction, he may not drink for at least three to four days after taking the drug.

Disulfiram is often described as "aversion therapy". It is not. Patients do not need to experience the disulfiram - alcohol reaction to be deterred from drinking alcohol any more than car drivers need to experience arrest to be deterred from exceeding the speed limit, although in both cases the experience will usually reinforce the deterrent effect.

Reaction

Signs and symptoms of the reaction,[4] which may last from 30 minutes to several hours, include flushing, throbbing in the head and neck, breathing with difficulty, nausea, sweating, palpitations, rapid heart rate, a drop in blood pressure,

Antabuse is not an absolute cure for alcoholism

fainting attacks, and in severe cases respiratory depression and cardio-vascular collapse.

It is recommended that therapy start in hospital and that the drug is not administered until the patient has been alcohol-free for about 36 hours. Unless sedation is prominent, the daily dose should be taken in the morning, when the resolve not to drink may be strongest.[2] Before commencing therapy, the full implications of drinking alcohol must be explained to the patient. The drug must never be administered without the patient's full knowledge - although desperate spouses have administered it surreptitiously in food or beverages.

If administered on an outpatient[5,6] basis, it is necessary to arrange

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initially for the patient to visit on alternative days for the administration of disulfiram.

Other drugs[1] can cause a milder form of the disulfiram-alcohol reaction in predisposed patients. These include the Hypoglycaemic Sulfonylurea (Chlorpropamide), Metronidazole, Cephalosporins (Cefamandole and Lata Moxef), Nitrafurantoin, Procarbazine, ingested animal charcoal, Cyanamide, and the ingested Fungus Coprimus Atramentarius. Effects of disulfiram do not appear for almost three hours after ingestion of an oral dose and may take up to 48 hours to appear. The maximum effect usually occurs 12 hours after ingestion.

Contra-indications

As in all medical application of drugs, the physician must be guided by considerations of absolute and relative contra-indications, and clinical evaluation (or the "calculated risk"). Relative contra-indications include cardio-vascular disease, severe hypertension, chronic severe respiratory disease, epilepsy, impaired renal function, pregnancy, and severe hepatitis[7] or cirrhosis. It is incumbent on the physician to be fully aware of and assess the existence of these conditions before treatment. It is suggested[8] that disulfiram therapy should never be contemplated in the presence of abnormal liver function tests and when used in heavy drinkers of alcohol with normal liver function tests, frequent monitoring should be carried out. In some cases, it is contended that severe alcohol abuse will have far more disastrous effects on conditions than the controlled, successful use of disulfiram.

Antabuse can interfere with the metabolism of other drugs, prolonging or altering their effects or producing side effects. Common examples are all substances containing alcohol or alcohol-like chemicals, for example many anti-cough preparations, substances containing vinegar, fermented food-stuffs such as sour milk porridge in

Supportive counselling, psychotherapy and family therapy should be part of the treatment

black South African communities, and certain cosmetics containing alcohol. The inhalation of fumes by workers, who are on disulfiram therapy, at alcohol, chemical, industrial and fuel energy plants can also cause severe reactions. Disulfiram inhibits hepatic microsomal drug metabolising enzymes, interfering with the

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metabolism of Phenytoin,[4] Theophylline[9] and other drugs.

Dangerous?

The view that disulfiram is a rather dangerous drug, is not justified.[3] The rare cases of reported deaths from the disulfiram alcohol reaction is small,[12] and must be set against the considerable mortality of unchecked alcohol abuse. Disulfiram has a low toxicity - rather less than aspirin.[13] Alledged side-effects - which range from headaches and conjunctivitis to loss of libido and impotence to psychosis[10] - are often due to alcohol withdrawal or are psycho-dynamically rooted.

Any drug that has a potential for severe toxicity must be used with a clear knowledge of its therapeutic effectiveness, its risk and the best

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It is not a dangerous drug: most opposition to it is ideological

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treatment regimen. Most authorities today strongly advocate the supervised[3] administration of disulfiram as an indispensable concomitant of successful treatment for the alcohol dependent.

Most opposition to disulfiram is ideological. Psychoanalysts argue the drug is "just a crutch" and does not deal with the "underlying problems". Often there are no 'real' problems; the patient's problem is that he drinks too much. If you can stop him from drinking then there is no problem left. However, for those patients who do have problems, it is much easier to deal with them when they are sober. However, anything which facilitates assistance automatically helps the kind of talking and listening which can both reveal and relieve underlying problems when they do exist.

Uncontrolled, unsupervised use of disulfiram with a belief that it is a complete cure for alcoholism, is undoubtedly dangerous. Its value lies in its use, simply and solely, as an additional mechanical safeguard to break the vicious cycle of alcohol addiction.

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