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3,158,540

METHOD FOR ALLEVIATING THE WITHDRAWAL SYMPTOMS OF DRUG ADDICTS

Paul Francis O'Hollaren, 4511 E. 38th St., Seattle, Wash.
No Drawing. Filed Jan. 30, 1963, Ser. No. 255,111 5
6 Claims. (Cl. 167-67)

This invention is concerned with the treatment of drug addiction and more specifically, it relates to a method and compositions for alleviating the withdrawal symptoms of humans who are drug addicts.

Drug addiction, as defined by the Drug Addiction Committee of the National Research Council is a state of periodic or chronic intoxication, detrimental to the individual and to society, produced by the repeated administration of a drug. Such addiction is characterized by a compulsion to continue to take the drug and to increase the dose with the development of psychic and sometimes physical dependence on the effects of the drug so that the development of means to continue the administration of the drug becomes an important motive in the addict's existence. Thus, an addictive drug as the term is meant to be employed in this specification is one used initially for the relief of physical or psychic pain and if used consistently may lead to dependency on the part of the host because of an insatiable craving and severe withdrawal symptoms which develop if the use of the drug is discontinued.

There are several types of drug possessing addictive properties. The most common type includes the narcotics which possess the most potent addictive qualities. A narcotic is defined as any drug which produces sleep or stupor and at the same time relieves pain. Such drugs include opium alkaloids, as for example, morphine, heroin and codeine as well as synthetic narcotics not related to the opiates such as meperidine and methadone. Thus, any drug whether natural or synthetic, which is found to have addiction forming or addiction sustaining liability is a narcotic and any person who uses such drugs continuously for other than medicinal purposes to develop a state of euphoria is a narcotic addict.

Narcotic addiction is a very serious sociological and economic problem not only in the United States but in many other countries of the world. There are at least 45,000 known narcotic addicts in the United States alone and several thousand more who are unreported. The total number of narcotic addicts in the world is estimated to be in the millions. These persons are a detriment to society because once they develop the narcotic habit, they are no longer productive and will do anything including robbery and murder to obtain the funds with which to buy narcotics from nefarious peddlers. Despite strict government regulations and rigid law enforcement, the illegal use of narcotics continues virtually unabated.

The only known treatment for a narcotic addict is to place such a person in a clinic where the amount of narcotic is gradually reduced each day until the addict is no longer dependent upon the drug. At the present time, there is no absolute cure for the narcotic habit. It would, therefore, be extremely beneficial to mankind if a treatment for narcotic and other drug addicts could be developed which would destroy the innate craving of these unfortunate persons for addictive drugs and make them more usefully members of society.

Another type of addictive drug includes the hypnotics and sedatives such as the barbiturates, bromides, chloral hydrate, paraldehyde, cannabis or marijuana and mescaline as well as the so-called tranquilizers such as 2-methyl-2-n-propyl-1,3-propanediol dicarbamate. Short acting barbiturates such as pentobarbital or secobarbital are generally preferred by addicts rather than long acting agents such as phenobarbital. The barbiturates are often used

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by morphine addicts when the opiate is not readily available and combined addiction thus results since both drugs must then be taken in order to prevent withdrawal symptoms.

A third type of addictive drug includes the stimulants such as amphetamine and cocaine. Barbiturate addicts frequently abuse amphetamine. Although the excitation and euphoria provided by the drug may be a factor in addiction, the many unpleasant side effects caused by large doses act as a deterrent to its continued use. Cocaine likewise causes euphoric excitement and pleasurable hallucinations add to the satisfaction obtained. The cocaine addict is not a normal individual but is often a dangerous and debased person.

It is an object of the present invention to provide compositions which can be readily and conveniently administered to drug addicts and which are very effective in the treatment of various types of drug addiction.

A further object of this invention is to provide a method for the treatment of drug addicts which substantially reduces and alleviates the craving for addictive drugs.

A still further object is to provide a method for the treatment of narcotic addicts which is simple to perform but effective in relieving the withdrawal symptoms of such addicts.

Other objects will become apparent throughout the following specification and appended claims.

It has now been discovered that diposphopyridine nucleotide (hereinafter referred to as DPN) is effective in the treatment of drug addiction when administered to humans intravenously or intramuscularly in combination with any non-toxic, pharmaceutical, liquid carrier. DPN is a coenzyme which can be isolated from fresh baker's yeast and which is commercially available as a white powder freely soluble in water. In a preferred method of operation, DPN can be conveniently dissolved in aqueous, is tonic, saline solution and administered intravenously to drug addicts in order to provide a positive balance of this important coenzyme and at the same time substantially reduce or completely eliminate the insatiable craving of such addicts for more drug.

In preparing compositions suitable for use in the present invention, DPN can be mixed with liquid carriers such as water, vegetable oils, benzyl alcohol, propylene glycol and the like in the form of a solution, suspension or emulsion. If desired, such compositions may contain other substances such as preserving agents, stabilizing agents, wetting or emulsifying agents, buffers and salts for varying the osmotic pressure.

Various dosages of the above compositions can be employed depending upon the route of administration. When the compositions are employed intramuscularly, it is preferred to inject 50 milligrams of DPN in normal saline solution three or more times daily depending upon the need of the patient for relief from his withdrawal symptoms. Intravenously, a solution of 500 to 1,000 milligrams of DPN in about 300 ml. of normal, aqueous saline is administered slowly at a rate of about 20 to 35 drops per minute once daily for about four days and thereafter the same dosage is administered twice weekly for about three weeks or until the addict is alleviated of the severe withdrawal symptoms associated with drug addiction.

The following example is presented to illustrate the efficacy of DPN in the treatment of drug addiction, including narcotic addiction, but is not to be construed as a limitation of the invention.

Example 1

Four patients ranging in age from 46 to 52 years who had been addicted to narcotics for from 3 to 25 years

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were each administered one gram of DPN dissolved in 300 ml. of aqueous saline solution intravenously at a rate of about 30 drops per minute. This treatment was continued once daily for four days. All the drugs to which these patients had been addicted were withdrawn after the first DPN treatment without detrimental effect. There were no noticeable side effects and the blood pressure of each patient remained normal throughout the treatment with DPN.

Effects similar to those described in the foregoing example are observed when DPN is administered intramuscularly at somewhat reduced dosages to drug addicts. Although the exact mode of action of DPN in the metabolism of addictive drugs is not known, it is apparent that injections of this coenzyme produce a definite improvement in the condition of drug addicts and aids materially in reducing the insatiable craving so prevalent in the withdrawal of drugs upon which the addict has become dependent.

This application is a continuation-in-part of my co-pending application Serial No. 105,572, filed April 26, 1961, now abandoned.

What is claimed is:

1. A method of alleviating the withdrawal symptoms of drug addicts which comprises administering to a drug addict a composition consisting of diphosphopyridine nucleotide and a liquid, non-toxic, pharmaceutical carrier.

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2. A method as claimed in claim 1 in which the composition is administered intravenously.

3. A method as claimed in claim 1 in which the composition is administered intramuscularly.

4. A method of relieving the symptoms of drug addiction which comprises administering intravenously to a drug addict a daily dose of from 500 to 1,000 milligrams of diphosphopyridine nucleotide dissolved in aqueous, normal, saline solution.

5. A method of relieving the symptoms of drug addiction which comprises administering intramuscularly to a drug addict a daily dose of from 50 to 150 milligrams of diphosphopyridine nucleotide dissolved in aqueous, normal saline solution.

6. A method of alleviating the withdrawal symptoms of narcotic addiction which comprises administering intravenously to a narcotic addict a daily dose of from 500 to 1,000 milligrams of diphosphopyridine nucleotide dissolved in about 300 milliliters of aqueous, normal, saline solution at a rate of from 20 to 35 drops per minute.

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