Amphetamine Use, Misuse, and Abuse

Edited by David E. Smith

AMPHETAMINE USE, MISUSE, AND ABUSE:

PROCEEDINGS OF THE NATIONAL AMPHETAMINE CONFERENCE, 1978

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Introduction

David E. Smith, M.D.

This book is intended as a comprehensive review of all aspects of the amphetamine issue. For definitional purposes, amphetamine *use* means the use of this drug for an appropriate medical indication based on sound clinical judgment; amphetamine *misuse* means the use of this drug for nonmedical indications without evidence of dysfunction; amphetamine *abuse* means the use of the drug to the point where it seriously interferes with the individual's physical, economic, or social functioning.

This publication is based on the National Amphetamine Conference held at the University of California Medical Center in San Francisco, 16 and 17 September 1978. Our Amphetamine Evaluation & Physician Training Project, via its Steering Committee, compiled a nationwide panel of experts to present all aspects of the amphetamine issue ranging from therapeutic aspects to abuse in order to reflect the latest state of the art in the field of amphetamine study.

In addition, where appropriate, the panel discussed amphetamine-related stimulants in order to facilitate comparative analysis. Both the Conference and this book were designed to aid the physician, but other agencies and institutions interfacing with the medical community such as law enforcement agencies and drug treatment programs will find this publication of value.

Section I is a review of amphetamine pharmacology, history, and current political policy issues under the Carter administration. Section II presents the epidemiology of amphetamine and related substances. It is interesting to note that since the amphetamine or "speed" epidemic of the middle 1960s which devastated many communities including the Haight-Ashbury District of San Francisco, the problem of amphetamine abuse has declined quite significantly. This decline was caused, in part, by the Federal Controlled Substances Act of 1970, which increased regulation of physician amphetamine prescription and greatly reduced

diversion of amphetamine from legitimate sources to the drug culture. Amphetamine was placed in Schedule II of the act, which represents the category of prescription psychoactive drugs which have medical usefulness but a high potential for abuse. In addition, production quotas for amphetamine manufacture were arrived at by the Food and Drug Administration (FDA) and the Drug Enforcement Administration (DEA), and subsequent implementation of these controls dramatically reduced the diversion of amphetamines in the illicit drug market.

In his review of the current epidemiology of amphetamine abuse, Dr. Newmeyer analyzes the factors that have contributed to the substantial decline in the amphetamine abuse problem, but emphasizes that the abuse of other general central nervous system stimulants, including methylphenidate (Ritalin) and cocaine, have increased. In their chapter, Dr. Morgan and Ms. Kagan evaluate the effects of the Controlled Substances Act of 1970 and its impact on the street amphetamine scene, indicating that street amphetamine quality has greatly deteriorated. At the present time, only a small percentage of the current street amphetamine tablets available to the user actually contain amphetamine and many are adulterated with other substances, including ephedrine and caffeine. This is not only interesting from an epidemiological point of view, but must be taken into consideration by national policymakers in view of national data systems that report adverse amphetamine reactions without toxicological verification. For example, individuals coming into emergency rooms for treatment of drug reactions may not have taken amphetamine at all, but rather consumed a substance sold on the street purported to be amphetamine — certainly not pure, pharmaceutical-quality amphetamine. Consequently, efforts to limit the diversion of amphetamines by further reducing therapeutic indications and production quotas, although effective in the late 1960s, have no significant impact on the present amphetamine abuse problem since the sources of supply are much less from legitimate manufacturers and much more from clandestine laboratories and foreign manufacturers. Regulatory and law enforcement approaches will have to be adapted as the amphetamine abuse situation varies and old solutions become ineffective for new problems.

Section III outlines the therapeutic uses of amphetamine and begins with a review of proper prescribing practices by Dr. Lasagna. At the present time, the therapeutic indications for amphetamine are narcolepsy, hyperkinesis, and short-term treatment for obesity. The editors feel that the well-trained and experienced physician can, by using his or her clinical judgment, effectively employ amphetamine for these and other medical conditions to benefit the patient if such prescription is based on a sound diagnosis and a well-thought-out treatment plan. Dr.

Ungerleider reviews the less common uses of amphetamine and outlines their possible use in non-FDA-approved conditions with particular emphasis on depression, pain, and epilepsy.

Relative to the approved indications for amphetamine in the short-term treatment of obesity, narcolepsy, and hyperkinesis, the prescribing physician should begin with a basic awareness of the FDA guidelines as reflected in the FDA package insert for amphetamine. For example, for the treatment of obesity the FDA package insert and *Physicians' Desk Reference* begins with the following warning:

> Amphetamines have a high potential for abuse. They should thus be tried only in weight reduction programs for patients in whom alternative therapy has been ineffective. Administration of amphetamines for prolonged periods of time in obesity may lead to drug dependence and must be avoided. Particular attention should be paid to the possibility of subjects obtaining amphetamines for non-therapeutic use or distribution to others, and the drugs should be prescribed or dispensed sparingly (*Physicians' Desk Reference* 1978).

Obese adult patients instructed in dietary management and treated with anorectic drugs lose more weight on the average than those treated with placebo and diet as determined in relatively short-term clinical trials. The use of amphetamines in the treatment of exogenous obesity is intended as a four-week short-term adjunct to a regimen of weight reduction based on calorie restrictions for patients' refractory to alternative therapy, including repeated diets, group programs, and other drugs. Amphetamines are not recommended for use as anorectic or appetite suppressant agents in children under 12 years of age. The daily dose usually recommended is 1, 10, or 15 mg. amphetamine spansule daily, taken in the morning, or up to 30 mg. of amphetamine tablets daily, taken in divided doses of 5 to 10 mg. approximately 60 min prior to meals. Anorectic medication can also serve as a supplement to diet re-education programs in association with exercise plans. The major emphasis is on short-term diet control. The major reason for this emphasis on short-term diet control is the development of tolerance with subsequent amphetamine abuse. Dr. Stunkard, however, presents a new theory and a new hope relative to the development of tolerance to appetite suppressant medication and recommends a future direction for research and treatment in this important area.

In prescribing for narcolepsy, the second FDA-approved medical indication, the usual dosage is 5 to 60 mg. of amphetamine per day in divided doses depending on the individual patient response. Narcolepsy seldom occurs in children under 12 years of age, but when it does the suggested initial dose for patients aged 6 to 12 is 5 mg. daily. Daily

dosages may be raised in increments of 5 mg. at weekly intervals until optimal response is obtained. In patients 12 years of age or older, the initial starting dosage should be 10 mg. daily with daily dosage raised in increments of 10 mg. at weekly intervals until optimal response is obtained (*Physicians' Desk Reference*).

Drs. Soldatos, Kales, and Cadieux emphasize in their chapter, Narcolepsy Evaluation and Treatment, that very often narcolepsy is underdiagnosed by the practicing physician and is a more complicated condition and occurs with greater frequency than previously suspected. They present guidelines for the approach to the diagnosis and treatment of narcolepsy.

The third and probably the most controversial medical indication for amphetamines is in the treatment of hyperkinesis, or minimal brain dysfunction, in children. Amphetamine and amphetamine-related compounds such as methylphenidate (Ritalin) are recommended as adjunctive therapy to other remedial psychological, educational and social issues. However, the exact etiology of minimal brain dysfunction is unknown and there is no single diagnostic test available for narcolepsy. The characteristic signs most often observed are chronicity of short attention span, distractibility, emotionality, impulsiveness, moderate to severe hyperactivity, minor neurological signs, and abnormal electroencephalogram (EEG). Learning disabilities are often present, and the diagnosis of minimal brain dysfunction must be based on a complete history and evaluation of the child. Amphetamine treatment is not indicated for all children with minimal brain dysfunction, appropriate educational placement is essential, and psychological and sociological intervention is often necessary. When such remedial measures alone are insufficient, the decision to prescribe stimulant medication depends on the physician's assessment of the chronicity and severity of the child's symptoms. Amphetamine treatment of hyperkinesis is not intended for use in the child whose hyperactivity is due to environmental factors or primary psychiatric disorders. If the diagnosis is correct, the amphetamines or amphetaminelike compounds will have a paradoxical calming effect on hyperactive children with minimal brain dysfunction and will facilitate their educational and social development. Hyperkinesis, however, is often overdiagnosed by the nonmedical community. Consequently, the administration of amphetamine produces a stimulant rather than a calming effect. Conversely, parental and community concern over the development of amphetamine abuse in hyperkinetic children has often produced pressure in which the child is denied the needed medication and as a result is unable to stay in school and progress with his or her educational and social development. There is no evidence that