One must be cognizant of the fact that there is probably more confusion in relation to diagnosis and appropriate criteria for the use of medication for the treatment of hyperkinetic children than there is regarding the choice of medication. Many physicians, as well as the general public, do not truly appreciate the differential diagnosis of the overactive child. The symptoms may be an expression of basic personality, anxiety, subclinical seizure disorders, strictly in the eyes of the beholder, or true hyperkinesis; the latter is the only condition in which stimulants might be expected to be beneficial.

The use of drug therapy in the management of the hyperkinetic child does not differ appreciably from drug therapy in other treatable maladies. In both instances prescription drugs should be prescribed only by appropriately licensed physicians. Although the screening of patients may frequently be done by other disciplines, the ultimate selection of patients remains the responsibility of the prescribing physician. Rarely is hyperkinesis an isolated symptom. Hopefully, the selection of the drug to be used is based on such factors as history and physical examinations with appropriate emphases and the weighing of risks (that is, the ramifications of the untreated patient versus side effects and long-term sequelae of medication). A satisfactory means of evaluating the effects of therapy and periodic reevaluations (follow-up) should be included.

Whatever the diagnostic nomenclature, the "indications" depend largely on clinical acumen rather than pathognomonic findings. There is some agreement about the indications for the clinical use of stimulant drugs for hyperkinetic children even though there must be a trial on the medication before its efficacy can be determined for a particular child.

The hyperkinetic child is typically one of normal intelligence who fails to learn at a normal rate even though he is given the same educational opportunities as children with equal intelligence. He usually exhibits to some degree (1) short attention span, (2) easy distractibility, (3) impulsive behavior, and (4) overactivity. Although other behaviors oftentimes are seen in children with normal intelligence and academic lag, stimulant drugs seem to be most effective in the four behaviors just mentioned. Little is known about the effect of stimulant drugs on such things as poor motor integration, deficits in the perception of space, form, movement and time, and disorders of language or symbol development.

Of the agents available, apparently the most effective and probably the best documented stimulants are dextroamphetamine and methylphenidate, though many others are under investigation at this time. Selection of the agent and the proper dosage must be tailored to the individual child as there is wide individual variation in the amount necessary to affect a change in behavior. Unfortunately, far too many clinicians abandon treatment after a brief, inadequate trial period. An appropriate regimen for the average-sized 6-year-old child begins with a minimal dose each morning at breakfast (5 mg of dextroamphetamine, or 10 mg of methylphenidate). A 2- to 3-day trial should follow. If no improvement results, dosage can be increased in like increments, with a maximum daily dose of 40 mg of dextroamphetamine or 80 mg of
methylphenidate. If an adverse reaction occurs after the first dose (increased hyperactivity and irritability) or no improvement is noted after increasing the dose to an acceptable level, the drug should be discontinued. If significant benefit is obtained in the morning hours but wears off before early afternoon, a second dose can be added with lunch. A satisfactory response is unequivocal. After a child has responded, omission of the drug is immediately evident to those around him because he returns to a “baseline behavior.” This can be used to rule out the “placebo” effect.

Although frequently the more common side effects (anorexia and insomnia) may disappear after the initial week or two of therapy, these side effects may be minimized by limiting the drug to morning and noon hours and administering it with meals. Less commonly, the use of these drugs will occasionally produce other side effects, (depression, noticeable mood change, hallucinations, or psychosis). In the few incidents reported, cessation of the drug alleviates the symptoms.

Even though most children are likely to require treatment for a prolonged period of time, there is little evidence of pharmacologic habituation. Many clinicians discontinue the use of medication over each long school vacation; this allows the child to start a new school year without medication. The medication is resumed only if the syndrome that initiated the original treatment hinders satisfactory school progress. There is little evidence of long-term side effects in the use of stimulant drugs for hyperkinetic behavior. Even if such data were forthcoming, one would have to carefully weigh the risks of long-term side effects against the risks of academic underachievement, loss of self-esteem, and other emotional sequelae to hyperkinetic behavior.

The fact that stimulant drugs are a valuable resource for properly selected children in critical need must not eliminate consideration of nondrug therapy in situations where such an approach is appropriate. There are many reasons why children of normal intelligence do not do well or do not behave properly in school. Chemical behavior modification is helpful to some. Frequently, overemphasis on academic achievement or decorum creates exaggerated alarm which blocks sober examination of facts by both proponents and opponents of drug therapy.

In the Committee’s judgment, there is a place for stimulant drugs in the treatment of hyperkinetic children. Moreover, such drug therapy in properly selected individuals does not constitute “constraint of freedom.” Rather, it is the child’s restlessness, distractibility, and impulsivity that are the constraints. Proper selection of patients is perhaps the key factor. In addition, monitoring and follow-up are necessary. Monitoring of hyperkinetic children at school must imply cooperation with and by principals, teachers, guidance counselors, and school physicians and nurses. The overall management of school failure may well be a multidisciplinary venture, but the ultimate responsibility for chemical behavior modification is the physician’s. Assuming such a responsibility requires the physician to avail himself of the accumulated knowledge of the subject, a sound principle in any therapeutic undertaking.

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REFERENCES

BIBLIOGRAPHY
Galen (A.D. 131-201), one of the greatest figures in medicine, was the principal authority in the medical schools of medieval and Renaissance Europe. Galen was so venerated by his contemporaries that many regarded him as a God and even formed a religious cult for his worship.¹

His biologic views concerning women were not seriously challenged until the seventeenth century. In the Oeuvres de Galen (Paris, 1854-1856) one reads this about women:

The female is more imperfect than the male. The first reason is that she is colder. If, among animals, the warmer ones are more active, it follows that the colder ones must be more imperfect ...

Just as man is the most perfect of all animals, so also, within the human species, man is more perfect than woman. The cause of this superiority is the [male’s] superabundance of warmth, heat being the primary instrument of nature ...

The male’s testicles are all the stronger because he is warmer. The sperm born there, on reaching the final degree of concoction, is the formative principle of the animal. From a single principle wisely imagined by the Creator—that whereby the female is less perfect than the male—follow all the conditions useful for the generation of the animal: the impossibility for the female genitalia to emerge externally, the accumulation of a superfluity of useful nourishment, an imperfect sperm, a hollow organ capable of receiving perfect sperm.

In the male, instead, everything is the reverse: an elongated member suitable for copulation and emitting sperm, and an abundance of this same thick warm sperm ...

Do not therefore be surprised if the right [side] of the womb and the right testicle are much warmer than the left [side] of the womb and the left testicle. [This is] not only because of their nourishment but also because of their position in a straight line with the liver. Now, if this is established and it is agreed that the male is warmer than the female, it is no longer illogical to assert that the right sides must engender males and the left sides females.²

Noted by T. E. C. Jr., M.D.

REFERENCES

Medication for Hyperkinetic Children
Pediatrics 1975;55;560

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