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EDITORIAL

RAUWOLFIA

This anti-hypertensive drug is being regarded as fulfilling a distinct need,[1] particularly in conjunction with the other hypotensives in current use. Rauwolfia is itself only moderately hypotensive but its mild, slowly progressive action is valuable and it produces few untoward effects. Used alone its sedative action is superior to that of the mild barbiturates for the reduction of blood pressure and for the relief of anxiety, irritability and compulsiveness. Even in large doses the drug does not lead to addiction or tolerance. It produces marked symptomatic improvement in most hypertensive patients and relief of headache, fatigue, palpitation and anxiety is brought about in almost every patient; the hypotensive action appears to be significant although slow and moderate in development.

In mild to moderate degrees of hypertension rauwolfia alkaloids would therefore appear to be of value and to produce results definitely superior to those obtained with ordinary sedatives. In more advanced cases, however, it should be supplemented with the more potent hypotensive agents such as hydrallazine, methonium compounds and veratrum preparations. Without rauwolfia this group of drugs may be difficult to use with safety. The concurrent use of rauwolfia permits their use in smaller dosage, and rauwolfia may also be given to maintain a normal (or almost normal) blood pressure once this has been achieved by combinations of the drugs. In this role as an adjuvant it may be that its action is not only additive but also synergistic. Furthermore, the benefits of combined therapy go beyond this, for rauwolfia counteracts certain of the undesirable effects of the more potent drugs. Thus it considerably lessens the nausea and vomiting that sometimes follow the use of veratrum preparations; it reduces the constipating action of methonium compounds; it counteracts the tachycardia and palpitations produced by hydrallazine. These benefits are attributed not so much to a tranquillizing effect of the drug through an action on the cortex but to its action in the midbrain, where it is supposed to have certain adrenergic blocking effects. This may account

VAN DIE REDAKSIE

RAUWOLFIA

Die mening word gehuldig dat hierdie antidrukverhogingsmiddel in 'n definitiewe behoefte voorsien,[1] veral as dit saam met ander gewone antidrukverhogingsmiddels gebruik word. Rauwolfia self is nie 'n sterk antidrukverhogingsmiddel nie maar die matige werking, wat geleidelik toeneem, is waardevol en teenspoedige gevolge is min. As dit op sigself gebruik word om bloeddruk te verlaag, en om angs, prikkelbaarheid en dwang-impulse te verlig, het dit 'n meer kalmerende uitwerking as die ligte barbiturate. Selfs in groot dosisse lei dit nie tot verslawing of vatbaarheid nie. In die meeste gevalle van drukverhoging verbeter die simptome merkbaar en in feitlik elke geval verlig dit hoofpyn, afmatting, hartkloppings en angs; alhoewel dit stadig en matig ontwikkel, blyk die drukverlagingswerking betekenisvol.

Dit kom dus voor dat rauwolfia-alkaloïdes van waarde is met die behandeling van drukverhoging in 'n ligte of matige graad en dat dit resultate lewer wat bepaald beter is as dié van gewone kalmeermiddels. Vir ernstiger gevalle moet dit egter deur sterker drukverlagingsmiddels soos hydrallazine, methonium-verbindings en veratrum-preparate aangevul word. Sonder rauwolfia mag dit moeilik gaan om met veiligheid hierdie middels te gee. Die gelyktydige toediening van rauwolfia maak dit moontlik om kleiner dosisse van dié middels te gebruik. Rauwolfia kan ook gegee word om normale (of amper normale) bloeddruk te handhaaf sodra dit deur kombinasies van hierdie middels verkry is. In hierdie rol as hulpgeneesmiddel bestaan die moontlikheid dat dit nie net alleen additief is nie maar dat dit ook sinergisties is. Die voordele van gekombineerde terapie strek selfs verder as dit, daar rauwolfia sekere ongewenste nagevolge van die sterker middels teenwerk. Dus verminder dit tot 'n groot mate die mislikheid en vomering wat somtyds op die toediening van veratrum-preparate volg; dit verminder die hartlywigheid wat na die toediening van methonium-verbindings volg; dit werk die hartversnelling en hartkloppings teen wat deur hydrallazine veroorsaak word. Hierdie voordele word nie so seer aan die kalmering toegeskryf nie wat volg op die werking van die middel op die skors as aan die uitwerking op die middelbrein waar dit veronderstel is om sekere bynieragtige versperringswerk te verrig. Dit mag sulke gevolge verklaar soos neusverstopping en miose en ptose wat veral by diere voorkom, die stadige hartslag en die

for such effects of the drug as the nasal stuffiness and the miosis and ptosis that occur especially in animals, the bradycardia, and the increased motility of the bowel; there may be other explanations for certain other effects. The drug sometimes causes nightmares and anxiety when given in big doses. In men a decrease in libido, but not impotence, can be produced; this effect does not occur in women.

Finnerty [2] agrees with Wilkins [3] that a real symptomatic improvement is produced by rauwolfia. He found no appreciable benefit from its use in congestive heart failure and also that when hypertensive vascular disease was treated by rauwolfia alone the status of the hypertensive vascular disease was not appreciably changed. When a combination with the other antihypertensive drugs was used the progress of the vascular disease appeared to be slowed and even regression of organic changes might take place.

During rauwolfia therapy the patient tends to gain weight from an increase in appetite or lessened 'nervous' activity, and this may present a problem, especially in obese patients.

Rauwolfia is not a drug that acts suddenly or powerfully. It has a gradual mild hypotensive action, which results perhaps from its tranquillizing effect. The action takes about 3-6 days to appear, 3-6 weeks to reach a maximum, and 3-6 weeks to disappear. Only after weeks of continuous administration, therefore, can the effectiveness of the drug be judged.

Rauwolfia serpentina is a handsome bush with shiny green leaves and pink flowers. It has long tapering snake-like roots, which are the main source of the drug. A yellow powder prepared from the root has long been used in India for various purposes; physicians in India observed the hypotensive action of the drug, which in that country was mainly used in cases of mental disturbance. Extracts of the plant and purified active alkaloids have been prepared. The action of all these preparations is clinically very similar provided equivalent doses are used (100 mg. of the root, or 2 mg. of the alseroxylon fraction, or 0·1 mg. of reserpine).[3] The drug may be given orally in these doses 1-4 times a day; or it may be given at bedtime, or in the morning, according as the sedative effect is required in relation to daytime activity or to disturbed sleep. Different schedules may be tried, but it should be borne in mind that continuation of large doses may produce overdosage effects; it takes some time for either the beneficial action or cumulative effects to appear.

1. Editorial (1954): S. Afr. Med. J., **28,** 511.
2. Finnerty, F. A. (1954): Amer. J. Med., **17,** 629.
3. Wilkins, R. W. (1954): *Ibid.*, **17,** 703.

verhoogde beweeglikheid van die ingewande; daar mag ander verklarings vir sekere ander gevolge wees. As die middel in groot dosisse gegee word veroorsaak dit somtyds nagmerries en angs. In mans kan dit die libido maar nie die onvermoë verminder nie; hierdie reaksie kom nie by vrouens voor nie.

Finnerty [2] stem met Wilkins [3] saam dat rauwolfia werklik 'n simptomatiese verbetering teweegbring. Hy het gevind dat met die gebruik van hierdie middel daar geen aanmerklike verbetering in kongestiewe hartverlamming bespeur word nie. Hy het ook gevind dat as rauwolfia alleen gebruik word vir die behandeling van vaskulêre siekte wat op drukverhoging volg, dié siektetoestand nie aanmerklik verander nie maar as dit saam met ander antidrukverhogingsmiddels gebruik word dit oënskynlik die ontwikkeling van die vaskulêre siekte vertraag en dat dit selfs teruggang van organiese veranderings mag bewerkstellig.

Met rauwolfia-terapie is die pasiënt geneig om gewig op te tel. Dit kan die gevolg wees van verbeterde eetlus of van verminderde 'senuwee'-aktiwiteit en kan veral in die geval van vetsugtige pasiënte 'n probleem skep.

Dit ageer nie skielik of sterk nie en verlaag die druk geleidelik en gematig, moontlik as gevolg van die kalmerende uitwerking. Dit neem omtrent 3-6 dae voordat resultate verkry word. 3-6 weke om 'n hoogtepunt te bereik en 3-6 weke om te verdwyn. Derhalwe kan die doeltreffendheid van die middel slegs na weke van onafgebroke toediening beoordeel word.

Rauwolfia serpentina is 'n mooi struik met blink groen blare en ligroos blomme. Die wortels, wat die vernaamste bron van die middel is, is lank, spits en slangagtig. In Indië word 'n geel poeier, wat van die wortel berei word, vir jare al vir verskeie doeleindes gebruik; geneeshere in Indië het die drukverlagingswerking van die middel ontdek en dit hoofsaaklik in gevalle van geestessteurings gebruik. Aftreksels van die plant en gesuiwerde aktiewe alkaloïede is al berei. Klinies is die werking van al hierdie preparate baie eenders mits dat ekwivalente dosisse gebruik word (100 mg. van die wortel of 2 mg. van die alseroxylon-fraksie of 0·1 mg. van reserpine).[3] Sulke dosisse kan 1-4 keer daagliks per mond gegee word; of dit kan met slaaptyd of soggens toegedien word al na gelang die kalmerende uitwerking in verband met die dag se aktiwiteit of die nag se slapeloosheid gebring moet word. Verskillende tydtafels kan op proef gestel word maar dit moet altyd in gedagte gehou word dat om met groot dosisse aan te hou, dit die gevolge van te groot dosisse mag uitlok; dit neem 'n hele rukkie voordat die voordele of die kumulatiewe werking openbaar word.

1. Van die Redaksie (1954): S. Afr. T. vir Geneesk., **28,** 511.
2. Finnerty, F. A. (1954): Amer. J. Med., **17,** 629.
3. Wilkins, R. W. (1954) *Ibid.*, **17,** 703.

ULTRASONICS

English-speaking workers on both sides of the Atlantic are very critical of new physical methods of treatment, and any advance in these methods makes heavy weather in the conservative and critical climate of Britain and the United States. The newest form of treatment in this field is ultrasonics, a name given to mechanical (in contradistinction to electromagnetic) energy waves that travel at a rate faster than 20 kilocycles per second (the

frequencies used in medicine are much higher than this, in the vicinity of 800-1,000 kilocycles per second).

The ultrasonic beam is a device for projecting heat into the tissues. 'Ultrasonics are a useful alternative method of thermotherapy which gives results comparable to those of short-wave diathermy',[1] although for various reasons it is unlikely that ultrasonics will ever replace it. Among other reasons, the apparatus is expensive, the technique difficult, and the published results of its therapeutic efficacy in most conditions not significantly superior to those obtained with other methods. However, the energy waves in the ultrasonic beam, which are dissipated in the tissues as heat, are selective in that most energy is released at the tissue inter-faces, e.g. between muscle and sheath, tendon and areolar tissue. Moreover, their mechanical effects cause increased tissue permeability and hasten the rate of ion exchange over the cell membranes. This specialized action of ultrasonics makes it the treatment of choice (1) in cases where scarring due to fibrous-tissue formation is the main factor, e.g. adherent scars following plastic operations, healed skin ulcers and even cases of Dupuytren's contracture; (2) where there is exudation of blood and haematoma formation, as in sports-field injuries; and (3) in the treatment of bursitis and tendinitis—conditions which respond more rapidly to treatment by the methods of physical medicine than any other.

There has been a tendency to lay stress on the potential dangers of ultrasonic treatment, though most of its protagonists tend to dismiss them as unimportant. Properly carried out, with a good layer of liquid paraffin between the head of the beam and the affected part (excluding air, which is an absolute barrier to the waves) and applied to 'non-dangerous' parts of the body, there is very little real danger apart from overheating of the tissues, which manifests itself as a dull ache or an actual pain. It is obvious that the inexperienced practitioner applying ultrasonic treatment should adopt a conservative approach until he has acquired enough experience to enable him with confidence to select his cases and control the application. Most workers on the subject have made this point. In a recent number of the *Practitioner*[1] articles on the subject are to be found and at page 300 of this issue we publish an article in which Dr. R. Robins-Browne relates his experience of the use of this latest addition to the armamentarium of the physical medicine specialist.

1. The Practitioner (1955): **174**, 216