

The effect of drug therapy on circadian variations in blood pressure, and the influence of the timing of therapy

M.S. KNAPP & A.M.J. WOOLFSON
(introduced by T. BENNETT)

Renal Unit, City Hospital, Hucknall Road, Nottingham NG5 1PB

In 1961 hospital-made automatic blood pressure measuring equipment was used to demonstrate the changes in blood pressure during sleep in patients with hypertension (Shaw, Knapp & Davies, 1963). Measurements were made of the hypotensive effect, during the 24 h period, of the drug therapy then in use (McInness, Shaw, Knapp & Davies, 1964 unpublished observations).

In 1976 a commercially available automatic machine, the Roche Arteriosonde, was used to record blood pressures over 24 h during studies into the pharmacokinetics and biological effects of atenolol therapy during both acute and chronic administration (Woolfson & Knapp, 1977).

The domiciliary approach to the study of biological rhythms (Knapp & Hillier, 1974) has been adapted to investigate patients on treatment with hypotensive medication using simple electronic 'do it yourself' sphygmomanometers. Data has been collected on the control of early morning blood pressure and on the effect of the timing of drug therapy on the control of blood pressure. The equipment used in these studies will be demonstrated, together with illustrative results and their analysis.

References

- KNAPP, M.S. & HILLIER, P. (1974). The domiciliary measurement of human physiological rhythms. *J. Physiol.*, **242**, 45-46.
- SHAW, D.B., KNAPP, M.S. & DAVIES, D.H. (1963). Variations of blood pressure in hypertensives during sleep. *Lancet*, *i*, 797.
- WOOLFSON, A.M.J. & KNAPP, M.S. (1977). Pharmacokinetics and biological activity of Atenolol—effect of acute and chronic dosing over 24 hours. *Proc. Roy. Soc. Med.*, **70**, suppl. 5, 36-38.

Menstrual fluctuations in hearing—suggestions for hormone or drug monitoring methods in man

M.P. HAGGARD
(introduced by A.T. BIRMINGHAM)

MRC Institute of Hearing Research, University of Nottingham Medical School, Queen's Medical Centre, Nottingham

The many delicate mechanical, metabolic and electrophysiological stages of the peripheral hearing mechanism lead to ambiguities in specifying causes of a hearing loss but justify considering hearing as a method of drug monitoring. As the salicylates and some diuretics and antibiotics are ototoxic, (Hawkins, 1976) there are specific reasons for such auditory monitoring. Modern psychoacoustics offers a wide range of perceptual phenomena with associated methods of stimulus control and task organisation; these can stress and hence reveal the underlying

mechanisms more critically than absolute threshold tasks do. An example is in the human menstrual cycle where no absolute threshold effects are reported. A task involving the angular localisation of sounds by interaural time differences in the region of 100 μ s showed large and significant menstrual variations, while other tasks did not, rendering a mood explanation implausible (Haggard & Gaston, 1978). The oestrogen/progesterone ratio may be involved. Auditory demonstrations of localisation of clicks and the central detection of 'beating' in tones delivered to different ears will be given.

References

- HAGGARD, M.P. & GASTON, J.I.B. (1978). Changes in auditory perception in the menstrual cycle. *Br. J. Audiol.* (in press).
- HAWKINS, J.E. (1976). Drug Ototoxicity in *Handbook of Sensory Physiology*, Ed. Keidel, W. D. & Neff, W. D. Vol. V/3. Heidelberg: Springer Verlag.