

Letter from . . . Chicago

Counting sheep and eating herbs

GEORGE DUNEA

During grand rounds a famous professor of medicine would sit in the front row and inevitably fell asleep. But when asked his opinion about a difficult clinical problem—on account of his incomparable experience in such cases—he would wake up promptly and with great presence of mind ask “What is the age of the patient?”

Other professors, less famous or less in control of their brainstem reticular formation, might not have done so well. They might even have blotted the faculty escutcheon by not waking up, snoring loudly, muttering irrelevancies, or falling out of their seats. Practising doctors when phoned in the middle of the night by the nurse exhibit a similar variability in performance. Some have been known to mumble strange incantations instead of calculating the amount of bicarbonate needed to treat a severe diabetic ketoacidosis. Others have gone through the entire calculation without waking up. More extreme still was the case of the houseman who when called about a blocked intravenous drip told the nurse to connect it to the nasogastric tube. On coming to the ward in the morning he was astounded that he had given such an order and even more so that it had been carried out.

Most doctors in private practice, however, become quite used to being woken up several times a week or even every night. They also seem to have no trouble in falling asleep again, although eventually they may end up sleeping in separate bedrooms from their wives. Most sleep disorders, then, seem to affect not the medical shepherds of the race but the very goats and sheep themselves—perhaps some 10 to 20 millions of them.

Seduced by complexity

Increasingly, these disorders are being studied in sleep laboratories by specialists equipped to analyse rapid eye movement and non-rapid eye movement sleep. Conceivably, some day the investigations will also include measurements of an orchestra of sleep promoting factors. Scientists have already extracted a non-peptidic substance from the blood of sleeping rabbits, and a glycoprotein “factor S” from 4.5 tons of human urine. They also have found the latter to have a mass of 922 daltons and to consist of glutamic acid, alanine, diaminopimelic acid, and a sugar called muramic acid. Perhaps some day doctors will prescribe such a factor as a nightly draught of a sleep promoting substance as well as measuring it by radioimmunoassay to investigate refractory cases. They might even discover that the professor’s drowsiness at grand rounds is due to a pathological reversal of his circadian rhythm rather than to the effect of looking at slides in the dark, the regrettable absence of patients at such teaching exercises, or the soporific effect of a droning enumeration of 57 normal laboratory results.

Yet what if the professor were to be found to have obstructive sleep apnoea, a sometimes deadly condition, hidden by the night and manifested by excessive sleepiness during the day. His wife might have diagnosed his nocturnal snoring and chokings after reading about it in a women’s magazine had she not fled to the next room from the persistent calls of hyperdynamic night nurses. A healthy index of suspicion might have helped (oh, how easily we fall for such platitudes, for where, alas, is such an index not required?), especially if the professor is thin and does not have ear, nose, or throat abnormalities, a large tongue, or even an underlying neurological disorder. Computed tomography might show narrowing of the nasopharyngeal passages, but a precise diagnosis of this condition, said to affect over 5% of people over the age of 40, may require a \$600 polysomnography test. Even more daunting is the treatment, especially of severe cases. Some patients have had tracheostomies, others have undergone uvulopalatopharyngoplasty (pronounced as if consisting of one syllable, preferably with a guttural accent). Better then for our professor merely to suffer from narcolepsy, a condition afflicting perhaps 150 000 Americans and at one time said to have taken a mean of only 15 years to diagnose.

Simple cures for sleepless nights

Sleep specialists are also interested in jetlag, enuresis, restless legs, and nocturnal myoclonus. Their bread and butter, however, is still plain insomnia. With considerable originality they have classified this into acute and chronic, and with remarkable insight they have discovered that it is not a disease but a symptom—like fever, anaemia, and dementia—needing a diagnosis and a “work up.” The long textbook list of possible causes includes gastric reflux; nocturnal myoclonus; caffeine, alcohol, and other drugs; and a host of even more disreputable habits such as erratic hours, a busy social life, and shift changes at work. Good advice is to avoid sleeping pills, which quickly become ineffective, cause hangovers, and may result in amnesia, so that people taking a pill on an airplane have landed abroad unable to remember who they were and how they got there.

Pending the availability of the extract from 4.5 tons of human urine, insomniacs are to fall back on remedies such as keeping a sleep log, avoiding alcohol, taking a snack or a hot milk drink before bed, taking tryptophane, setting up presleep rituals, always getting up at the same time, exercising in the evening, reserving the bedroom for only sleep and sex, resetting the clock and staying up later (a technique known as chronotherapy), or getting up if they cannot fall asleep within 30 minutes and going to another room—though not necessarily raiding the refrigerator. Listening to music may help, but even better is “white noise,” such as the sound of radio static, rain, ocean surf, or air conditioners. Monotonous music seems to work best, better than unpredictable sounds, as shown by one experiment, in which students listening to hard rock slept for only five minutes, compared with 38 minutes for mellow rock and 72 minutes for classical music. Furthermore, not all classical pieces were equally effective, so that—for example, the rousing “William

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Tell Overture" worked well, whereas the soothing Brahms "Lullaby" varied too much in speed and volume to maintain sleep. Another traditional approach, also approved by sleep scientists, is the old fashioned method of counting sheep.

The value of herbs

This may be particularly acceptable at a time of renewed interest in the value of linden tea for insomnia, ginger for congestion, catnip tea for flu, slippery elm for sore throats, and garlic for high cholesterol concentrations and hypertension. In a world increasingly ambivalent about science herbalism, the discipline that gave us digitalis, quinine, morphine, and atropine, is making a comeback along with a host of other long forgotten home remedies.

Thus we read that otolaryngologists now recommend that swimmer's ear, the otitis externa caused by the multiplication of bacteria and fungi in the wet auditory canal, may be prevented by instilling vinegar followed by alcohol and then letting it drain. Herbal medicines are also becoming popular again, even with the scientists. In July a leading pharmaceutical company entered into an agreement with the Shanghai Institute of Materia Medica to screen 110 Chinese herbal remedies and extract their active ingredients by modern techniques. In France, where the consumption of medicinal plants has trebled in a decade, the government has mandated a study of herbs, mudpacks, acupuncture, and other forms of alternative medicine as "a social phenomenon that demands evaluation." And in the United States the sales of herbal medicines have grown within 15 years from practically nothing to a \$500m a year industry that has found its outlet through health stores and its respectability by being advertised on television.

Herbal remedies, furthermore, rarely do harm, especially if not used for serious illnesses and if people don't go out in the fields foraging for plants that might turn out to be poisonous. Herbal medicines also keep the patient occupied while his self limited disease improves, an art that has become distinctly unfashionable with the teachers of scientific medicine, so that students learn to give explanations but not placebos or symptomatic medicine. "There is nothing I can do for your cold," says the product of 12 years of scientific education, so the patient goes straight to a practitioner of alternative medicine who can help him and then gets all the credit for succeeding where the scientific doctor has failed. But for the

generation that plied its patients with tincture of tolu, cardamom, peppermint, belladonna, gentian, or nux vomica the news is that many of these ancient remedies are alive and well. Peppermint tea still soothes indigestion, camomile relieves sore throats, a pinch of ginger in hot water helps the common cold, and there is also demand for thyme, calendula, rosemary, skull cap, and wormwood. Camomile is also used topically as a hair rinse, peppermint as an analgesic for sprains and toothache, and St John's wort for cuts and wounds. While Siberian ginseng is said to kill bacteria or viruses and detoxify carcinogens, some sceptics worry that the imported herbs may themselves be coated with carcinogenic pesticides. Indeed, much of the interest in herbal medicine comes from the Orient and also from the Soviet Union, which in this respect is very advanced. Last year when a young Russian girl on an official goodwill visit to Chicago developed a cold her mother was shocked to hear that a certain herbal remedy, widely used in Moscow, could not be obtained in Chicago.

Who would do the laundry?

Also in Chicago some remedies, such as love potions, seem to work better on men than women. According to a survey by a women's magazine, only half of the wives interviewed would marry their husbands again given a second chance. Yet a different picture emerged in a parallel survey conducted on 2301 men by the *Chicago Sun-Times*, the local paper of which Mr Rupert Murdoch recently divested himself in order to buy a television station. Almost 80% of the men replied that they would marry their beloved wives again, in what the *Sun-Times* characterised as one "huge sappy valentine full of respect, passion and adoration." Many men referred to their wives as the light of their lives, worth their weight in diamonds. There was a wide spectrum of responses, however, ranging from the simple "I love her" and "who would do the laundry?" to "she is a disaster in every way," "a fat nag," "a lying, cheating tramp." Commenting on the results, a psychologist noted that men are more easily fulfilled, while women are more imbued with romantic yearnings. Men are also believed to seek intimacy less intensely than women and perhaps to be less in touch with their feelings. Said a Los Angeles psychotherapist: "If the fort is still standing and the wife isn't giving him too hard a time, then a man tends to think things are OK."

I practise in a part of the world where unbooked obstetric cases are often referred after interference resulting in varying degrees of contamination and infection. Is giving the baby at birth some antitetanus serum or tetanus antitoxin of any protective value? If so what dosage do you recommend?

Though almost unknown in developed countries, neonatal tetanus probably kills three quarters of a million babies each year in developing countries.¹ The cause is lack of hygiene at delivery, particularly regarding the umbilical stump. The World Health Organisation aims at eradicating the disease by the year 2000 by training birth attendants in hygiene and by encouraging immunisation of pregnant women. Two doses of tetanus toxoid at least four weeks apart given to a woman during her first pregnancy will offer almost 100% protection to the baby,¹ and boosters should be given in each subsequent pregnancy; after five doses there is lifelong protection. If an unimmunised woman is seen after an unhygienic delivery her risk of losing her baby from this disease will depend on where she lives: in Sudan the overall risk is 1% but in Haiti it is 14.5%.² It seems reasonable to give antitoxin to a baby at risk, particularly if the umbilicus is contaminated.³ Although the prophylactic dose of human antitetanus immunoglobulin appears to be about 5-10 units per kilogram of body weight,⁴ an adult dose of 250 units is recommended for neonates.³ Therapeutic doses of 500 units have been given to babies without apparent side effects.⁵ If human antitetanus immunoglobulin is not available the recommended dose of bovine or equine antitoxin is 3-5000 units.³—JAMES OWEN DRIFE, senior lecturer in obstetrics and gynaecology, Leicester.

1 Cook R, Galazka A. Eliminating neonatal tetanus—an attainable goal. *Arch Dis Child* 1985;60:401-2.

2 Anonymous. Prevention of neonatal tetanus. *Lancet* 1983;ii:1253-4.

3 Miller ME, Stiehm ER. Immunology and resistance to infection. In: Remington JS, Klein JO, eds.

Infectious diseases of the fetus and newborn infant. 2nd ed. Philadelphia, London: WB Saunders, 1983:43.

4 Stiehm ER. Standard and special human immune serum globulins as therapeutic agents. *Pediatrics* 1979;63:301-19.

5 McCracken GH, Dowell DL, Marshall FN. Double-blind trial of equine antitoxin and human immune globulin in tetanus neonatorum. *Lancet* 1971;ii:1146-9.

What might be the cause of substantial ketonuria observed in a fit young man at a pre-employment examination? He did not have glycosuria.

The hypoglycaemic and antilipolytic effects of insulin do not go hand in hand. Some obese patients do not become ketotic on fasting despite the fact that they are losing weight. Others readily become ketotic. In patients with diabetes mellitus euglycaemic ketoacidosis is well recognised, though unusual, and is a sign of insulin deficiency. During starvation, when insulin secretion is low, fatty acid oxidation is enhanced and this is particularly so if the diet is high in fat or the individual has diabetes mellitus. More acetoacetate, beta-hydroxybutyrate, and ketone bodies are produced and these are used as normal forms of tissue nourishment. Alcohol enhances the ketotic response to starvation by augmenting lipolysis. The nitroprusside reaction for ketones is predominantly for acetoacetate and does not detect beta-hydroxybutyrate so that if the ratio of acetoacetate to hydroxybutyrate is increased an exaggerated impression of the degree of ketosis will be shown by the nitroprusside test. There are thus several possible explanations for the heavy ketonuria in this young healthy man. He may well have an exaggerated lipolytic effect of the reduced insulin secretion associated with starvation. Alcohol may have exaggerated lipolysis even further. He may also be one of those individuals in whom lipolysis is associated with an enhanced rate of production of acetoacetate compared with hydroxybutyrate.—C W H HAVARD, consultant physician and endocrinologist, London.