

Any Questions ?

We publish below a selection of those questions and answers which seem of general interest. It is regretted that it is not possible to supply answers to all questions submitted.

Catabolism of Drugs

Q.—What factors determine the rate of catabolism of drugs by the liver ?

A.—The rate at which the liver will metabolize drugs depends upon the chemical nature of the drug and the availability of enzyme systems within the liver to attack the drug and break it down. The behaviour and properties of an important group of these enzymes have been studied by B. B. Brodie and his colleagues.^{1,2} This work has been mainly done in the test-tube. The effectiveness of any enzyme system depends up to a point upon the concentration of the substance being metabolized. It must reach a certain minimum concentration, but after that a direct relationship of the rate of metabolism with blood concentration does not necessarily exist. The best-known example is alcohol, which is metabolized at a constant rate.³ Antipyrine in dogs is also metabolized at a constant rate.⁴ Barbiturates are mainly metabolized in the liver.⁵ Judged by the anaesthetic effects, experimental animals "metabolize" barbiturates in quantities proportional to the amounts present in the body.⁶ However, these indirect observations do not prove that it was metabolism by the liver that was responsible for the disappearance of the anaesthetic effect. The drug probably disappears into the body fat and is then slowly released, to be metabolized at a constant rate.⁷

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Ultrasonic Therapy

Q.—What are the indications for the use of ultrasonic therapy in physical medicine? Is a physiotherapist using an ultrasonic machine liable to suffer any ill effects from it?

A.—Workers in the field of physical medicine in Great Britain have not obtained the results claimed for ultrasonic therapy on the Continent. It seems, however, that this physical agent has some place in the treatment of conditions which result in undesirable fibrosis or in contractures due to fibrosis.

Ultrasonic vibrations do not appear to have any deleterious effects on the tissues at intensities below those which cause cavitation or burning. It is, moreover, very doubtful whether field strengths of such magnitude would ever be developed except from the applicator of the instrument. The risk to the operator is therefore negligible.

Transporting Injured Miners

Q.—What is the best position for transporting miners with possible fractures of the spine a considerable distance for medical examination? Should they be prone or supine?

A.—The prone position has been tried in British mines but has not found general acceptance for several reasons: (1) It is not always practicable—e.g., when there are associated injuries to legs, pelvis, or chest. (2) If the patient is shocked or dazed, breathing is liable to become obstructed in the prone position. (3) The supine position is universally applicable and perfectly safe.

The real danger in the first-aid treatment of an injured spine is not the position on the stretcher but the manœuvres that occur between extricating the patient from the position

in which he is found and placing him on the stretcher. In mining accidents he may have to be manhandled over a distance of many yards in a confined space to the nearest point to which a stretcher can be brought, and if he is lifted by the armpits and the knees it can be extremely dangerous. The really dangerous injuries—i.e., those in which the spinal cord or cauda equina are vulnerable—are the unstable fracture-dislocations (about 20% of the whole), and these are unstable in both flexion and rotation. The whole emphasis, therefore, should be on the avoidance of flexion and rotation during the process of extrication and manhandling to the stretcher point. Once the patient is lying flat on the stretcher with his lumbar curve supported by a folded blanket, there is no danger of damage to the cord or nerve roots during transport. Another point is that in about 50% of fracture-dislocations the facets are "locked," and in these circumstances the prone position not only fails to correct the displacement but may actually increase pressure on the cord.

Risks of Oil Sprays

Q.—What are the risks to workers in motor garages employed in spraying the undercarriage of cars, under high pressure, with (a) paraffin and (b) heavy hydrocarbon oil diluted with some volatile vehicle?

A.—Many cases of pneumonia in children following the accidental ingestion of paraffin oil (kerosene) have been reported in the literature,¹ but there appears to be no information on the direct inhalation of paraffin oil mists. Aspiration of liquid paraffin (liquid petrolatum) leads to acute lipoid pneumonia or to the development of "paraffinomas," hard fibrous masses containing oil droplets.² A case of chronic lipoid pneumonia following occupational exposure to liquid paraffin sprays has been reported.³ Paraffin oil is generally free from carcinogenic hydrocarbons, but there may be traces in the heavy oil. The "volatile vehicle" used with the heavy oil might itself have some effect. Petroleum vapours have some anaesthetic and narcotic action, and solvents such as trichloroethylene are powerful anaesthetics too. If the mists are deposited on the skin there is also some risk of dermatitis or oil acne. It might be possible to control the mists with a system of local exhaust ventilation similar in principle to that used for dust control in foundries.⁴

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Dangers of Ultra-violet Light

Q.—If pulmonary tuberculosis has been excluded by radiography, what are the dangers (if any) of parents treating a child at home with an ultra-violet lamp?

A.—Pulmonary tuberculosis is always cited as a contra-indication to exposure of the chest to ultra-violet rays. This is because of the danger of precipitating haemoptysis, though the actual risk is difficult to estimate and the mechanism obscure. Apart from pulmonary tuberculosis, any disease associated with light sensitivity (e.g., congenital porphyria, systemic lupus erythematosus) is also a contra-indication. In addition certain drugs, including chlorpromazine and the sulphonamides, and certain heavy metals may act as sensitizers and make the administration of ultra-violet light less safe. The chief danger of home irradiation with ultra-violet light is that of overdosage, as the safety margin may be quite small. The makers' instructions should therefore be carefully adhered to. Goggles should invariably be worn by both the patient and the person supervising treatment. Most modern ultra-violet lamps are of the mercury-vapour electronic-discharge type, and these are to be preferred to

the carbon-arc model. The latter requires replacement of the carbons from time to time, constitutes some danger from sparking, and is also more expensive to run.

Pain over Pubis

Q.—Ten days after a normal birth of a large baby the mother developed pain over her symphysis pubis. It has persisted for a year now. It is brought on by lifting and walking and can be reproduced by pressing outwards on the anterior iliac spines. A recent radiograph of the symphysis showed no abnormality. What is the likely diagnosis and prognosis in future pregnancies? What treatment might help?

A.—The patient probably sustained a tear or strain of the ligaments controlling the symphysis pubis. This may not have been obvious immediately after delivery; it would be more noticeable when she became active again. Even disruption of the symphysis pubis is a possibility; the separation or increased mobility of the joint would not necessarily show radiologically unless the exposures were taken with the patient standing on one or other leg.

Even a minor lesion of the symphysis can remain painful and tender for some considerable time. The only treatment necessary is rest, together with a corset which grips the pelvic girdle firmly. The condition should become symptomless in time, but it is likely that the joint will be painful again during the latter part of a subsequent pregnancy, and for a short time afterwards. The amount of discomfort, however, should not be enough to deter the patient from further pregnancy, especially if she wears a corset throughout.

Winter Infections

Q.—What factors account for the increased prevalence of diseases such as influenza and the common cold during the cold, damp months of the year? Does the type of summer weather experienced have any important effect on people's resistance or on the "carry over" of virus or of reservoirs of infection into the succeeding winter?

A.—All infections believed to be spread largely by airborne droplets tend to an increased prevalence in the winter seasons in all parts of the world. It seems likely that cold, damp weather favours the dissemination of droplets, and hence the spread of respiratory viruses, and unlikely that it causes any alteration in specific resistance to infectious agents. During the winter the human nasopharyngeal flora is altered quantitatively, and this may be due to changes in local factors such as ciliary action and secretion of mucus. Too little is yet known about resistance to human respiratory viruses to say that chilling exerts no effect. Various agents provoke attacks of latent virus infections such as herpes febrilis. Adenoviruses are known to be latent within the nasopharyngeal adenoid tissue, and some infections by these viruses could therefore be endogenous rather than exogenous.

It seems highly unlikely that summer weather can exert any effect on immunity or the survival of virus until the following winter.

Halitosis

Q.—What are the most likely causes of halitosis, and what treatment is recommended?

A.—The almost invariable cause of halitosis is some infection in the mouth or respiratory tract. Such diseases as bronchiectasis and lung abscess may cause it, and the teeth should be carefully scrutinized by a dentist and any gingivitis or cavity treated. In many patients chronic infection of the tonsils is responsible, and this can often be convincingly demonstrated by rubbing the tonsil with the finger, which will then yield olfactory proof of the origin of the fetor. Chronic nasal disease, such as atrophic rhinitis or sinusitis, is another possible cause, and these conditions should be excluded.

NOTES AND COMMENTS

Exanthem Resembling Measles.—Dr. JOHN WINKLER (London, S.W.1) writes: The illness described ("Any Questions?" July 20, p. 171) may well be roseola infantum (exanthem subitum or "sixth disease" in U.S.A.). This mild febrile illness may be either unrecognized or diagnosed as an "atypical" or "slight" attack of measles or rubella. Failure to make the diagnosis explains, I think, the often obtained history of several attacks of measles or rubella. Further questioning brings out that one of the attacks was slight or doubtful in some way, while the other was the typical illness. An annotation in the *Journal* of October 14, 1950 (p. 876), has dealt fully with the clinical picture and diagnosis. The outstanding features are the age incidence (91% under 3 years), a remittent fever often with high temperatures up to 105° F. (40.6° C.) lasting three to five days, slight but constant posterior cervical gland enlargement, and finally a rash resembling rubella but less extensive, appearing within 48 hours of the end of the fever. The rash may be fleeting, lasting several hours, but often lasts 24 hours, and is usually completely gone within 48 hours. Roseola infantum is worth considering in the differential diagnosis of an unexplained high fever, or of a rubelliform rash, in the first three years of life.

Female Orgasm and Conception.—A Medical Practitioner writes: The following case may be relevant to the reply on this subject in "Any Questions?" (August 10, p. 366). I was called to a married woman (2 para) aged 40 late one evening to remove a condom which was caught in the vagina. On examination the teat end of the condom was firmly gripped in the cervical os. Traction failed to disengage it, and after fixing Spencer Wells forceps as high up as possible it was released by twisting as one does for a placental removal. This does appear to indicate that at orgasm the os was patent and the teat end was sucked into the os.

Welfare Foods.—Dr. W. T. C. BERRY (Joint Secretary, Joint Subcommittee of the Standing Medical Advisory Committees) writes: My attention has been drawn to an error on page 15, paragraph 58, in the report on welfare foods made by the Joint Subcommittee of the Standing Medical Advisory Committees, and published by H.M. Stationery Office (see *Journal*, August 3, p. 284). It is there stated that, when the British Paediatric Association carried out its investigation into the incidence of rickets (1943), dried milk and infant cereals were not fortified with vitamin D, yet rickets was rare in the 12-18 months age group. We are now informed that certain dried milks and cereals were, in fact, then fortified. Though the subcommittee decisions were not affected by this misapprehension, we feel that attention should be drawn to it because a proportion of children in this age group presumably did receive vitamin D from these sources.

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