

JOURNAL OF CLINICAL PATHOLOGY

The Journal of The Association of Clinical Pathologists

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Other kinds of paper may prove to be as efficient bacteriologically and even more convenient in use than the crêpe paper used in these investigations. But a good paper evidently provides a better wrapping material than the fabrics commonly used for this purpose.

We thank Dr. W. A. Gillespie for his help and advice,

Dr. E. M. Darmady and Brig. J. D. Welch for their encouragement, and the Trustees of the Nuffield Provincial Hospitals Trust for a grant towards the cost of this investigation.

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 Pulvertaft, R. J. V. (1937). *Brit. med. J.*, 1, 441.
 Savage, R. M. (1940). *Quart. J. Pharm. Pharmacol.*, 13, 237.

Association of Clinical Pathological Broadsheets

The following broadsheets (new series) are published by the Association of Clinical Pathologists. They may be obtained from Dr. R. B. H. Tierney, Pathological Laboratory, Boutport Street, Barnstaple, N. Devon, price 1s. each.

- 1 The Disc Technique for the Rapid Determination of Bacterial Sensitivity to Antibiotics. 1952. R. W. FAIRBROTHER.
- 2 Determination of Sensitivity of *M. tuberculosis* to Streptomycin. 1952. R. L. VOLLUM.
- 3 The Detection of Barbiturates in Blood, Cerebrospinal Fluid, Urine, and Stomach Contents. 1953. L. C. NICKOLLS.
- 4 The Estimation of Carbon Monoxide in Blood. 1953. D. A. STANLEY.
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- 23 The Dried Disc Technique for Bacterial Sensitivity Tests. 1959. R. W. FAIRBROTHER and J. C. SHERRIS.
- 24 Safe Handling of Radioactive Tissues in the Laboratory and Post-mortem Room. 1959. R. C. CURRAN.
- 25 Titration of Antistreptolysin O. 1959. H. GOODER and R. E. O. WILLIAMS.
- 26 The Periodic Acid-Schiff Reaction. 1959. A. G. E. PEARSE.
- 27 The Laboratory Detection of Abnormal Haemoglobins. 1960. H. LEHMANN.

in injuries involving the thorax, head, abdomen, and skin, the mortality remains high.

To define the problem, two groups of adequately transfused severe trauma cases were studied: 1, 11 cases of skeletal trauma; 2, four thoracic, four head, four abdominal, and 13 thermal injuries.

Replacement therapy was controlled by frequent blood volume estimations.

Creatinine clearances, tubular handling of electrolytes, blood pressure, and pulse rates were measured at 15-minute intervals initially, one or two hourly for at least 100 hours and 12-hourly for three weeks. Serial cardiac output data were available in six patients.

In skeletal trauma, large blood transfusions caused large fluctuations in each function studied. These varied in amplitude and period with time after injury and for different functions. Values for Na/K ratio and percentage filtered water and sodium excreted varied about a near normal mean.

Those with thoracic injuries showed persistently low cardiac output, Na/K ratios, and water and sodium retention with a normal blood volume, presumably due to disturbances of right to left heart blood flow and baroreceptor function. A similar pattern shown in abdominal injuries coincided with the presence of ileus. Head injuries with minimal blood transfusion showed large oscillations in blood pressure, pulse rate, and renal function. Extensive burns resulted in larger fluctuations of renal function and more damping of oscillations than the other groups, depending upon the clinical course. The effect of drugs, including anaesthesia, upon these patterns varied with the metabolic state.

It is known to engineers that when regulating mechanisms dependent upon feed-back control are subjected to disturbances, they may pass through a period of oscillation before returning to a steady state. Under certain conditions, certain forms of interference may cause extreme fluctuations and result in irreversible damage.

Blood transfusion, anaesthesia, and physiologically active drugs represent such disturbances to inherent homeostatic mechanisms maintaining the internal environment after trauma, particularly when organs concerned with regulation of the internal environment are injured (Graber, 1959).

Data were presented from the literature to indicate that similar fluctuations occur after ureterocolic anastomosis, adrenalectomy, and heart operations.

The interrelationships between the functions studied were not linear, but if they were known quantitatively and in detail, the behaviour of the system might be predicted and therapy designed to avoid extreme fluctuations. For the present this is not possible; far more study is needed. The results indicated the futility of isolated biochemical estimations and clinical observations as a guide to therapy.

Graber, I. G. (1959). *Modern Trends in Accident Surgery and Medicine*, Chapter III. Butterworth, London.

Notices

NO. 9 FREEZE-DRIED SERUM

We have received a notice from C. Davis Keeler Ltd. that the new batch No. 9 of freeze-dried serum prepared by the Glaxo Laboratories and analysed by the A.C.P./A.C.B. Committee is now available for distribution. The cost is 4s. 6d. per vial and the analysis covers the same constituents as before.

FOURTH INTERNATIONAL CONGRESS ON ANGIOLOGY

A preliminary programme has been received from the organizers of the Fourth International Congress on Angiology. The subjects will cover the metabolism of the vascular wall. The Congress will take place in Prague from 4 to 9 September, 1961.

INTERNATIONAL CONGRESS OF NEUROLOGY

The Seventh International Congress of Neurology will be held in Rome from 10 to 15 September 1961 under the auspices of the World Neurologic Federation and of the National Institute for Nervous Diseases and Blindness of Bethesda.

Full details are available from the President of the Congress, Prof. Mario Gozzano, or from the Secretary General, Dr. Giovanni Alemà, Viale Università 30, Rome.