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THE RÔLE OF A CASUALTY DEPARTMENT

The functions of a casualty department are most important in the every-day work of any hospital and, when mass casualties have to be dealt with, this department becomes the key-point in the organization of the hospital concerned. In an excellent comprehensive survey of the organization of a casualty department, on p. 825 of this issue of the *Journal*, Mr. T. Schrire discusses the rôle of the casualty department in the setting of the modern hospital.

He lists the four main functions of a casualty department applicable to all hospitals; namely, to treat casual patients when formal out-patient sessions are not in progress, to deal with accidents at any time, to attend to major and minor surgical infections, and to prevent infectious cases from entering the wards of a general hospital. In teaching hospitals there are two further facets of the work of a casualty department — to teach medical students and casualty officers and to take part in the research programme of the hospital.

The staffing of the casualty department is of importance. Where possible the medical staff should be of a more senior status than has been accepted up to now in most centres. It can be expected that any type of case will have to be dealt with, from the most trivial injuries to serious motor accidents, from coughs or colds to dramatic illnesses, medical, surgical, or gynaecological. Doctors who have to cope with such a variety of patients must have had a good deal of experience, must not get harassed under heavy pressure, and must be able to adjust their approach to every facet of medical practice. The nursing staff, too, should be of fairly senior status — a very junior nurse may not be able to take the responsibility that may easily come her way.

The suggestion that a senior member of the staff should be placed at the head of the department is a good one. With his greater experience, he can organize the work of the department to the best advantage, he can be of considerable assistance to his medical officers when serious cases have to be dealt with and, in times of emergency, when large numbers of casualties may have to be treated, his knowledge and presence will help the whole department to run smoothly and efficiently.

In a large teaching hospital, where specialists and senior members of the staff in many different fields are readily available, the work of the casualty department is eased, but in smaller hospitals, away from such assistance, a senior doctor at the head of the department will have an added and important function to perform.

It is important that a casualty department should have an adequate number of beds for its own cases. Many patients are brought to a casualty department who may require one or two days' observation — patients with possible head injuries who arrive in a drunken state; patients with abdominal or chest symptoms of doubtful aetiology, in whom the diagnosis will become plain in a day or two; and patients who have to undergo minor operations which require bed-rest and after-treatment for short periods, to name a few obvious examples.

There may well be no beds available in the general hospital wards for such patients, and to send them away for observation at home, often under very primitive conditions, places an enormous responsibility on the casualty officer. A suitable number of beds, in a ward close to the casualty department, where the casualty officers can keep a close watch on these patients, is most necessary.

The patient arriving at a casualty department with multiple injuries is in a special category. The arrangements at Groote Schuur Hospital for dealing with such patients, as outlined by Mr. Schrire, are obviously sound and can be recommended to all hospitals where they can be implemented. One senior member of the staff is in full control of the patient, and calls in other specialists as and when their services are needed for the particular patient. Thus all treatment is correlated and the most urgent measures are undertaken first.

It is in the sphere of mass casualties that the department's organization is tested to the full. Smaller centres, because of the natural limitations of size and facilities, cannot be expected to cope adequately with, say, fifty or sixty badly-injured patients. Nowadays, when modern forms of transport and the speeds they attain make the possibility of serious train or aircraft accidents a real and important danger, when civil disturbances or the outbreak of hostilities may lead to large numbers of persons being injured, casualty departments must have adequate plans in readiness to cope with these emergencies.

It is gratifying to learn that at Groote Schuur Hospital such plans have been made and have been tested in practice with excellent results. Mr. Schrire has set out *the ideal* towards which all casualty departments should strive. His article is a major contribution towards better casualty services throughout the country.

'N MODERNE ONGEVALLE-AFDELING

As gevolg van die lewensomstandighede van die moderne tyd neem die ongevalle-afdeling al meer 'n belangrike plek in in die samestelling van 'n hospitaal. In die verlede was dit dikwels die geval dat ongevalle-afdelings, selfs waar hulle verbonde was aan opleidingshospitale, 'n ondergeskikte plek ingeneem het. Nou is dit anders. Die eise van die moderne nywerheidstede en die metodes van vervoer, sowel as die feit dat groot gebiede van die stedelike en binnelandse bevolkings blootgestel is aan alle soorte potensiële gevare wat op massagrondslag kan toeslaan, maak 'n doeltreffende ongevalle-afdeling 'n essensiële deel van die uitrusting van hospitale in stedelike sowel as plattelandse gebiede.

Op p. 825 van hierdie uitgawe van die *Tydskrif* plaas

ons 'n artikel waarin dr. T. Schrire die organisasie van 'n moderne ongevalle-afdeling beskryf. Uit die werk wat hy gedoen het en die afdeling wat hy as toesighoudende hoof opgebou het, is dit duidelik dat 'n ongevalle-afdeling 'n baie groter rol kan speel as net 'n plek waar ligte beserings behandel kan word. Die belangrikste funksies van 'n afdeling soos hierdie word baie duidelik in die artikel uiteengesit.

Om mee te begin toon hy aan dat so 'n afdeling in staat moet wees om die probleme van alle soorte pasiënte — mediese sowel as chirurgiese gevalle, te hanteer gedurende tye wanneer daar nie ander formele buite-pasiënte ondersoeke is of toelatings kan geskied nie. Die ongevalle-afdeling moet dus op 'n dag-en-nag basis funksioneer, dwarsdeur die week en ook deur die naweek.

In die tweede plek moet die ongevalle-afdeling so georganiseer wees om sulke reserwes van personeel en ruimte te hê dat dit alle soorte ongelukke of beserings, veral die soort wat onverwags op groot skaal voorkom, kan hanteer. Ons dink hier byvoorbeeld aan beserings wat kan ontstaan as gevolg van treinongelukke, nywerheidsongelukke, disorganisasie van die samelewing deur opstande, oorlog, ens. Dit is *juis* die feit dat 'n ongevalle-afdeling sy werksaamhede moet kan uitbrei om groot aantalle pasiënte op kort kennisgewing te kan behandel wat 'n toets van die doeltreffendheid van so 'n afdeling is, want dit is in gevalle soos hierdie waar die addisionele hulp aan gewondes en beseerdes kan lei tot die redding van 'n groot aantal lewens.

In die derde plek moet die ongevalle-afdeling in staat wees om voorsiening te maak vir kleinere en grotere operasies in gevalle van infeksie. Die omvang van hierdie bedrywighede in die ongevalle-afdeling sal natuurlik onderhewig wees aan die algemene beleid van die betrokke hospitaal.

Vierdens is dit die taak van die ongevalle-afdeling om as 'n sorteerstasie te dien en toe te sien dat aansteeklike en besmetlike siektes nie sonder meer die hospitaal binnedring nie.

Dr. Schrire toon aan dat die faktore wat ons nou net genoem het al vier ter sprake kom as basiese uitrusting van enige ongevalle-afdeling. Daarby toon hy egter ook aan dat die ideale ongevalle-afdeling ook kan dien as 'n waardevolle opleidingsplek vir studente en ongevallebeamptes en dat dit ook kan dien as bron van en geleentheid vir belangrike wetenskaplike navorsing.

Vir almal wat 'n spesiale studie van hierdie saak gemaak het, moet die beginsels wat so duidelik deur dr. Schrire uiteengesit word baie welkom wees. As ons by die inrigting van ons mediese dienste die verbeelding sowel as die verstand wil gebruik kan dit daartoe lei dat ons meer en meer in staat sal wees om nie net noodsaaklike dienste te lewer nie, maar ook konstruktiewe voorbehoedende dienste. Ons wil die hoop uitspreek dat kollegas orals oor die land sal bydra daartoe om die beginsels wat uiteengesit word in die artikel waarna ons verwys aan te vul en uit te brei en om hulle dan op 'n groter skaal as in die verlede toe te pas.

PHENETHYLDIGUANIDE — PHENFORMIN — DBI — 'INSORAL'

This drug for the oral treatment of diabetes is now available on the South African market. It is rather doubtful whether its use can be recommended at present outside a specialized hospital department. Its real place in the treatment of diabetes is quite uncertain.

Chemically DBI is related to the synthalins, which were tried out in the 1920's but were found to be hepatotoxic. These drugs, however, were guanidines, and it would appear that the chemical differences in the diguanides are sufficient to render them very much safer. Damage to liver and kidneys does not seem to occur with DBI. Unfortunately, however, DBI is highly irritating to the gastro-intestinal tract, and a high proportion of subjects develop anorexia, nausea, vomiting, and diarrhoea before any therapeutic effect is produced. Weakness, lethargy and weight loss have been reported as later symptoms.[1] It is therefore necessary to start with small amounts of DBI (25 mg. per day at first) giving it with food and gradually increasing the dose. Even so, up to 50% of subjects (less in some reports) are unable to continue with the drug.

The hypoglycaemic action of DBI is quite different from that of the sulphonylureas (eg. tolbutamide) which appear to stimulate the pancreatic beta cells to release more endogenous insulin. DBI evidently inhibits certain oxidative enzymes[2] and increases anaerobic glycolysis, comparable to the effects of muscular exercise. There is a rise in blood lactic acid with the production of less energy than is provided by normal aerobic glycolysis. Further, the effects of DBI and exercise are additive;[3] there may be some danger in the rapid fall of alkali reserve when both agencies are working together. Moreover, in patients receiving DBI, ketone bodies may accumulate at relatively low blood-sugar levels, and one death has been recorded from ketosis under these circumstances.[2] If ketosis develops, dextrose and insulin should be given as soon as possible and DBI stopped. Furthermore it would appear that DBI should not be given with a diet which is very low in carbohydrate content.

Since DBI does not depend upon functioning pancreatic islet tissue for its activity, it might be expected to have some effect in the young insulin-requiring diabetic. Krall, from Boston, has reported rather favourably on its use in these patients.[4] Seventy-two patients with growth-onset diabetes were treated with either DBI or a closely related diguanide. In thirty-five he obtained successful control with either a reduced amount of insulin or with no insulin at all. In twenty-nine the drug was soon discontinued, usually because of gastro-intestinal effects; in eight there was a total failure. The best results were obtained with diabetes of recent onset (but these are the cases usually most easy to stabilize with insulin anyway). In general, the 'long-term' results (as far as they went) were satisfactory as regards continued control (absence of 'secondary failure'), absence of severe toxic effects, increase of height and weight, and delaying of the expected natural intensification of the diabetes.

As regards the use of DBI in the older 'maturity onset' diabetic, it may certainly succeed when diet alone and diet

plus sulphonylurea have failed to allow satisfactory control. Whether it should be used in these subjects is another matter, and in any event the proportion of patients who would reasonably qualify for a trial will be small.

In this country the Johannesburg workers did not have great success with DBI, as recently reported in this *Journal*.[5] It might be of use in those juvenile diabetics whose stabilization proves very difficult with insulin, and in those older people who are not controlled by lesser measures but find insulin, for various reasons, unsatisfactory. Its rôle in such cases still has to be worked out. It might be advisable again to sound the warning about stopping insulin in any patient of any age, unless a careful watch can be made, preferably under hospital supervision.

In summary it is probably true to say that by far the biggest drawback to DBI is the high incidence of gastro-intestinal symptoms which it produces. It is therefore a matter of pleasure to note that a new diguanide (a dimethyl derivative) has arrived in South Africa for clinical trial and that this drug seems to be far more easily tolerated. We shall look forward to hearing more of this in due course.

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