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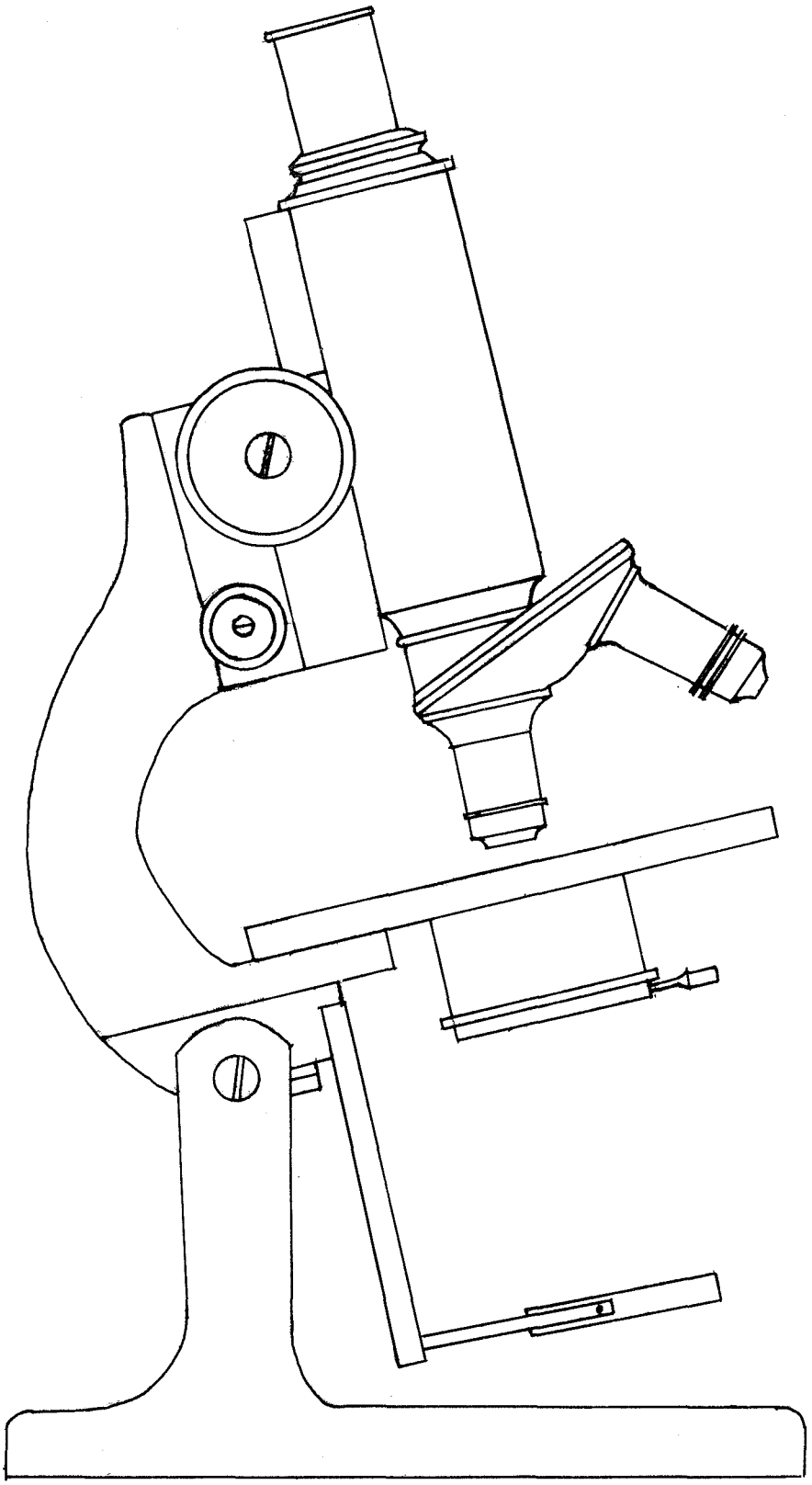
CHESTPIECE



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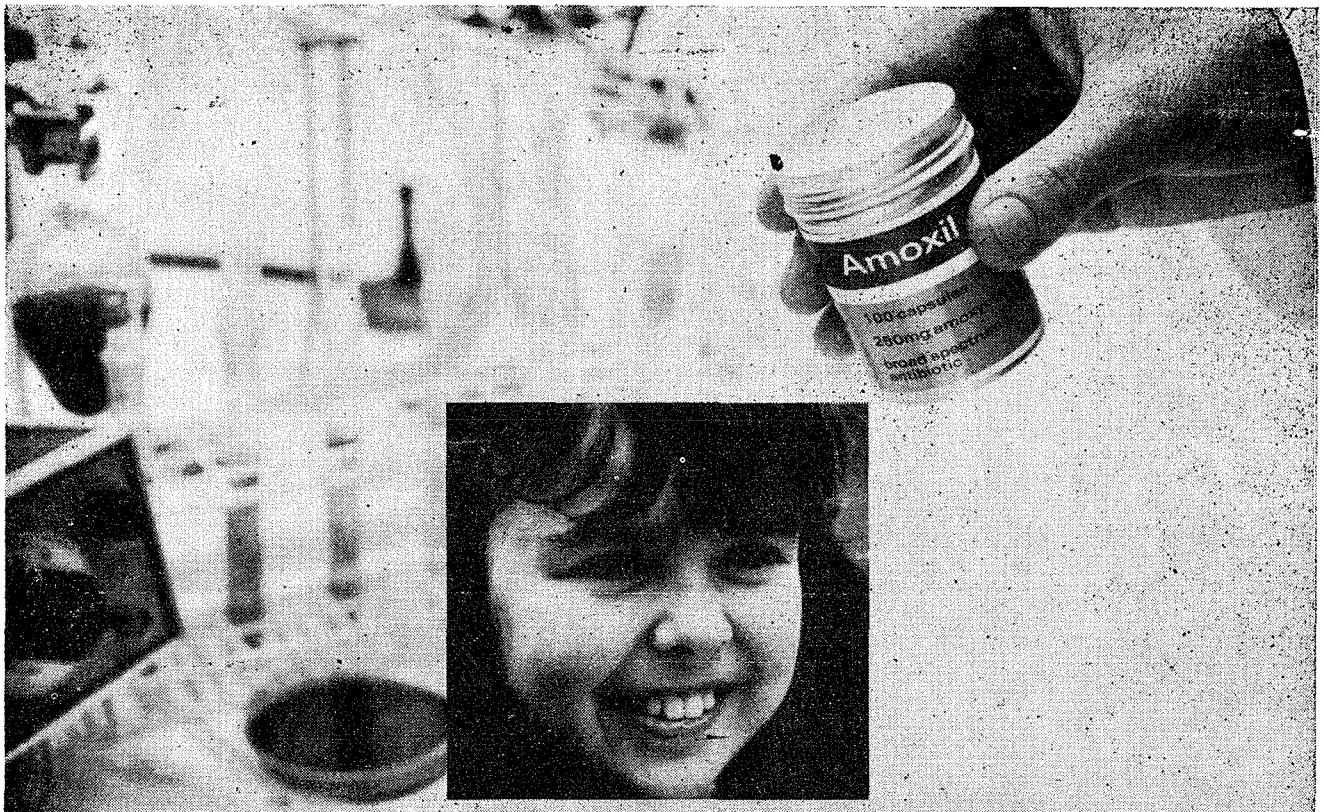

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MALTA 1979 vol. V no. 1

CONTENTS

EDITORIAL

In October 1978 CHESTPIECE commemorated its 30th anniversary; making it the longest lasting Maltese medical journal. It is followed by the ST. LUKE'S HOSPITAL GAZETTE which is 18 years our junior. Unfortunately this long existance has not been continuous and lapses in publication have occured, the longest of which was a four-year lapse in the period 1959-1963. The journal is now emerging from another short hibernation, the last issue having been in April 1976. Another issue for 1977 was in its final stages of preparation, but was 'frozen' because of reasons beyond the control of the previous editorial board. This was because of the MAM — Government dispute which has so closely involved the Medical School.

The Medical School situation is now under control with new educational reforms, namely the student-worker scheme. This scheme proposes that students at a tertiary level of education should every year spend a six-month period of study followed by a six-month period of work. The students under this scheme are paid a salary, determined by the level they have attained in their studies. The curriculum has not been interfered with except for changes to ensure a more integrated approach to each topic. This scheme has both advantages and disadvantages and only continuous dialogue between students and the authorities can ensure that the advanages are utilized to the full and the disadvantages ironed out.

Towards this aim, the MSA has striven to set its house in order and promote its aims as stipulated by the Statue; particularly that of being the representing body of the medical students. The publication of this issue of CHESTPIECE is one sign that the MSA is resuming activities as normal.

This issue has attempted to maintain the same standards and policies as were laid down in previous issues. This journal is a student journal and particular care has been taken to ensure a balanced representation of student and staff contributions. This Policy can of course only be adhered to in future issues so long as students continue to support their journal.

editor.

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WORLDWIDE AND LOCAL EPIDEMIOLOGY OF DIABETES MELLITUS

M. Bailey; M. Zarb; C. Savona Ventura

Diabetes mellitus is a disorder of metabolism characterised by hyperglycaemia due to deficiency or diminished effectiveness of insulin. The disease is a chronic one affecting carbohydrate, protein, fat, water and electrolyte metabolism. In its fully developed form it is characterised by fasting hyperglycaemia, atherosclerosis, microangiopathy and neuropathy. Hyperglycaemia may become manifest years before the clinical recognition of vascular disease or neuropathy.

The great majority of investigators now agree that diabetes mellitus (DM) may present clinically in a mild or asymetric form without a fasting hyperglycaemia; and that this is the most recognisable form of the disease. The typical vascular and neuropathic manifestations of DM may occur in patients with relatively mild carbohydrate intolerance and with normal fasting blood glucose levels.

DM is the most common of the endocrine disorders. Only a rough estimate as regards its incidence which varies from place to place can be made. When a population survey is conducted, previously undiagnosed cases are discovered and they are approximately as numerous as known cases. Most of the undiagnosed cases are discover among the older age group, ie. over 50 years. Undiagnosed diabetics often admit to symptoms which they may have endured for considerable periods without consulting a doctor. In some, however, there are no symptoms.

DM is commoner in middle and late life than in the younger ages; thus although the overall prevalance of known cases is about 1 in 200, the proportion is much lower in children and much higher in older persons.

Glycosuria in a population is more common than the disease entity. Glycosuria is frequent if urine samples are collected after a meal, or still more relevant after taking an oral glucose load of 50g. Using Clinistix, glycosuria may be detected in approximately 6% of males and 3% of females. It is slightly commoner in old people.

The significance of glycosuria varies greatly with age. In the young it is usually due to a low renal threshold for glucose and not due to hyperglycaemia. For glycosuric patients in their twenties, less than 10% have diabetes mellitus. In the old, however, glycosuria is usually significant and particularly in females indicates diabetes mellitus.

When population screening includes blood sugar estimations, problems in interpretation are again encountered due to a general variation of blood sugar values with age. After the age of 60 years, it may be difficult to decide what is diabetic and what is normal. The mean blood glucose value 1 hour after the ingestion of 50g glucose, rises by approximately 1 mg per 100 mls blood for each year of age. The 2-hour value for women aged over 70 years is just approximately 120 mg per 100 mls, a figure which is often taken as the dividing point between DM and normality. Hence, it is important to remember that although values above 120 mg per 100 mls are considered in the diabetic range, this value is only an arbitrary one.

It has been found that apparenly minor abnormalities of glucose tolerance are common but it is impossible to predict the course of events in an individual whose Glucose Tolerance Test (GTT) is mildly abnormal. In fact in a retrospective study of borderline cases it was shown that some patients with a mildly abnormal GTT may progress to frank DM whilst others may remain static or even regress (Schliak, V. et al 1975). In view of this observation, it is probably wise to regard a person with a mildly abnormal GTT as having an increased risk of developing frank DM and therefore needing periodic retesting, while remembering that there may be improvement or no further deterioration.

Diabetes mellitus has a multifactorial aetiology, on the basis of which two main types of diabetes are recognised:

1. PRIMARY or IDIOPATHIC DM includes the great majority of cases (99%). Unlike the secondary group, this is a treatable but not curable condition.
   a) Juvenile onset DM usually develops in the first 40 years of life in patients of normal or subnormal weight. Administration of insulin is necessary for their survival, hence the term insulin dependant DM.

b) Adult or maturity onset DM usually appears in middle aged or elderly patients who are often obese, and in whom hyperglycaemia can usually be controlled by dietary means alone or supplemented by oral hypoglycaemic compounds.

2. SECONDARY DM includes only a minority of cases which are a result of recognisable pathological process process or secondary to the treatment of some condition.

a) Those due to demonstrable pancreatic disease, where the pathological process causes the destruction of the pancreas and leads to impaired secretion and release of insulin. This group includes conditions such as pancreatitis, haemochromatosis, pancreatectomy and rarely tumours.

b) DM may also occur in relation to other endocrine disorders with abnormal concentrations of hormones which are insulin antagonists. Examples include growth hormone (acromegaly); adrenocortical hormones (Cushing's); adrenaline (phaeochromocytoma) and thyroid hormones (hyperthyroidism).

c) Drugs which block any step in the metabolism of insulin such as Alloxan and Streptozotocin; and those which block its secretion including thiazide diuretics, diphenyl hydratin and L-asparaquinase may be a cause of DM. Peripheral insulin antagonism occurs with glucocorticoids and ovulatory suppresant drugs.

d) DM can also be related to non-endocrine disease, particularly liver disease such as cirrhosis and hepatitis.

GEOGRAPHICAL AND RACIAL VARIATIONS (Pyke, D.A. 1969): Prevalance of DM is not known with certainty. Differences in testing procedures and criteria used to establish DM have led to variations in reported results. Nevertheless, crude estimations of prevalence can be made on different population samples by measurements of blood sugar levels, by interview, or by medical history.

DM occurs everywhere, no nation or race is immune, but in some it is rare. The total number of cases in Britain, diagnosed and undiagnosed, stands at roughly 6% with the highest incidence being in the seventh to eight decade of life.

Among the Eskimos of Alaska and Greenland, DM is very uncommon, and when it does occur it is mild. Insulin requiring diabetes is almost unknown.

In North American Indians there are wide differences. Among a tribe which lives in Alaska, DM as in the Eskimos is rare. However, it seems that among tribes in USA it is unusually common. Among the Pima Indians of Arizona, half of those over 30 years have blood glucose levels suggestive of DM. This tribe is notably obese and their diet is heavy with carbohydrate and fat. However, this does not wholly explain their remarkable frequency of DM. It seems to be due, at least in part, to a resistance to insulin, rather than a lack of it. Moreover the DM is clinically mild. Marriage outside the tribe seems to be too common for inheritance alone to account for the increased prevalance.

A high incidence of abnormal glucose tolerance has also been described in the Cherokee Indians of North Carolina.

There are also racial differences in the diabetes prevalance. In the West Indies, where the disease is common, DM seems to be twice as common in those of Indian descent as in negroes. The sex ratio is also different being the same in Indians, but having a higher rate in female negros. A similar racial difference is seen in South Africans. Obesity, poverty and diet have been considered but none fully explain the racial difference.

Diabetics number at least 1% of the population in Israel. It was suggested that the rate was low in new immigrants but rose to normal levels in those who had been settled for more than 25 years. Environmental, social or economic factors may have played a part in the incidence.

DM in Japan is about as common as in the Western countries. Juvenile onset diabetes and diabetic coma are rare, and the disease is considered more common in men than in woman.

Diabetes mellitus is one disease which in the mind of many Maltese physicians and doctors appears to be commoner on the Maltese Islands than elsewhere. Very few documented studies have been carried out regarding the incidence and epidemiology on the disease in the Maltese population.

A survey on blindness carried out in 1958 showed that of 638 blind persons, 92 (15.9%)

of these had in fact lost their eyesight because of DM (Damato, F.J. 1960). Diabetic retinopathy now accounts for about 10% of new cases of blindness at all ages. In addition, because it is associated with a much higher mortality than most other causes of blindness, these proportions are halved if persons who are blind from diabetic retinopathy are compared to the total existing blind poulation (Khan & Heller 1974). The apparent discrepancy in the figures from Malta can only be interpreted with some reservations, since besides being due to a possible increased local prevalence, it may be due to inadequately treated diabetes locally. In addition, the study population is not a representative one suitable for the prevalence study of diabetes in the Maltese population.

A similar prevalence was found in another population survey carried out on 5,757 individuals living in rural and urban areas (Zammit Maempel, J.V. 1965). Glycosuria after a high carbohydrate diet was found in 8.9% (9% males and 8.8% females) of the sample population, with a prevailing peak age of 70-79 years (29.3% males and 30% females). Glucose tolerance tests were carried out on glycosurics and non-glycosurics. The GTT's showed that 70.1% of glycosurics and 15.0% of non-glycosurics were diabetic. This gave an overall prevalence rate of 19.9% and also indicated that 1 in 6 of non-glycosurics had diabetes mellitus. Since Zammit Maempel defined diabetics as those whose GTT showed a fasting or 2-hour blood glucose level of 100 mg per 100 mls, he later corrected the prevalence rate to 17.2% taking the dividing point as 120 mg per 100 mls. This survey also indicated that the prevailing form of diabetes was the maturity onset diabetes in the peak ages of 50-54; the juvenile onset diabetes being uncommon.

URINE TESTING

Population — rural & urban
(n=5757)

No glcosuria	Glycosuria
91.1%	8.9%

GLUCOSE TOLERANCE TEST
(dividing line 100 mg%)

	Normal	Diabetic	Renal glycosuria	Lag storage curve
Non-glycosuric (n = 392)	67.8%	15.0%	1.5%	15.7%
Glycosuric (n = 324)	15.1%	70.1%	7.4%	7.4%

AGE DISTRIBUAION OF DIABETICS
(n=140)

0—9	10—19	20—29	30—39	40—49	50—59	60—69	70—79	80+	Age
0.0%	0.7%	2.1%	12.1%	25.7%	40.0%	17.1%	2.1%	0.0%	Diabetics

Fig. I: Prevalence of diabetes in the Maltese Population
(Zammit Maempel, J.V. 1965)

When compared with figures for Oxford, Massachusetts — 4.7% (Wilkerson & Krall, 1947); for Bedford — 12% (Butterfield, 1974); and the United States — 1.45% (McDonald, 1964), it would appear that there is a definite increased prevalence rate for the Maltese Islands. This higher prevalence could be attributed to obesity and diet coupled to a genetic influence, however it could have also been contributed to by the emigration drive which affected

predominantly the young. The 1921 census report for the Maltese Islands shows that no less than 11860 males emigrated to the U.S., Canada and Australia between 1911 and 1921. In the fifteen years from 1947 to 1962 permanent emigration was substantial. Its effects on the population may be gauged from the fact that had there been no emigration since 1947, the population of the islands fifteen years ago would have been greater by some 80,000 persons, less a number of returned emigrants estimated at 11,000 and plus the children who would have been born here had their parents not emigrated (Anonym. 1963b).

Diabetes mellitus in the Maltese Islands has an average proportional mortality rate of 64.33 per 1000 (1963-1972). Mortality statistics in the case of diabetes are imperfect indicators of disease incidence for a number of other variables may be coexistent causes for the death of the patients. A yearly mortality rate graph for the period 1896 to 1972 (Anonym., 1963a updated) shows two characteristic trends culminating in two peaks in 1942 and 1971. There is previous to these peaks mild upward trends with the yearly figures exhibiting wide irregular divergences from the trend. The peak of 1942 coencides with the Second World War period. Insufficiency of hypoglycaemic drug stores may in part explain the high mortality of this period. However, an increase in the mortality rates is not unique to the islands and can be compared with figures given by McDonald (1968) for the period 1957 to 1966. This increase may be attributed to (1) increased efforts at detection, (2) a general increase in life expectancy, and (3) an increased awareness of the disease.

URBAN-RURAL DIFFERENCES: Zammit Maempel (1965) also showed that there existed a definite higher incidence of glycosuria in the rural prevalentiy agricultural area studied (11.5%) as compared that in the urban area (8%), giving a ratio of 1:1.44. This ratio is directly opposite to that given for the United States for the years 1961-1963, which are given as 1.7:2. Zammit Maempel suggests that the difference was due to the fact that up to about 40 years ago, the rural areas in Malta were, unlike the urban areas, practically isolated from the more thickly populated part of Malta because of poor means of communication. This gave rise to a greater degree of intermarrage, with a corresponding increase in a genetically transmitted tendency. Other variables may include diet habits and different modes of life.

Another variable which the author recorded was the relation of physical activity and the disease. He found that heavy manual activities were less frequently encountered in diabetics (10.1%) than in non-glycosuria and glycosuric non-diabetes (42.7%). It was not determined whether this observation was a causal factor or the result of the disease. It may, however, be related to socio-economic variables.

Differences between urban and rural communities in relation to the prevalence of DM seems to be diminishing in the technically advanced countries just as they are in social and economic respects. The traditional concept that worldwide DM is less common in a physically active and healthy rural community than in a sedentary, prosporous and obese poulation is not proven.

AGE DISTRIBUTION: One fact about DM which is never disputed is that it becomes more common as age advances. It has already been noted above that Zammit Maempel found that the prevailing type of diabetes was the maturity onset diabetes in the peak ages of 50-54 years, the juvenile form being uncommon (ref. Fig. 1). The following table shows the mortality figures due to diabetes for the years 1963-1972 broken down to age and sex. This gives a higher incidence for deaths recordably due to diabetes for the age group in the region of 64-79 years.

This increased incidence of DM with age reflects a general change in glucose tolerance. In early life blood glucose levels are low but rise progressively so that over the age of 70 years, approvimately 15% of a poulation show mildly abnormal GTT.

SEX VARIABLES: In most countries DM is commoner in women than in men, however, under the age of 40 years the condition appears to be slightly commoner in males. In the fifties and sixties, DM becomes nearly twice as common in women as in men. This increased ratio was demonstrated by Damato's survey on blindness, when he found a male:female ratio of 1:3. Zammit Maempel found an overall ratio of 1:1.6. The mortality figures given in Table 1 give an average ratio of 1:1.79.

This pattern of sex incidence is seen all over Europe and America but is not universal. In Japan and Malaya diabetes is 50-100% commoner in men. The reason for the female preponderance seen in Europe and America is not known but has been associated with the effects of the menopause and parity. In addition the higher incidence in females in the older age group may be a result of the early mortality of the males due to other causes.


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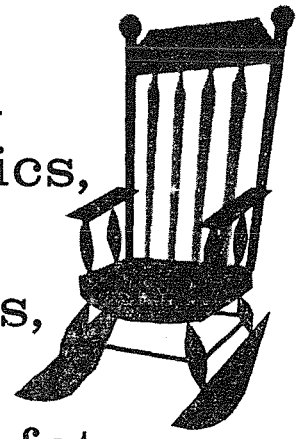

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headaches	arthritis pain
colds	dysmenorrhea
influenza	

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Panadol developed through research by Winthrop

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YEAR		1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
Proportional mort. rate/1000		62.0	50.0	53.0	51.0	57.0	60.4	55.6	81.5	93.2	79.6
Specific Mortality rate/10000 pop.		5.5	4.3	4.95	4.6	5.34	5.45	5.2	7.1	8.85	7.26
Both sexes:	all ages	181	139	158	146	170	174	168	251	288	232
	under 25	—	—	1	—	1	—	—	1	1	3
	25—44	3	4	4	1	3	—	2	—	4	1
	45—64	37	44	38	37	42	30	43	67	76	54
	65—74	81	50	63	55	64	76	74	101	115	85
	over 75	60	41	52	53	60	68	49	82	92	89
Males:	all ages	69	50	51	45	56	50	59	106	105	85
	under 25	—	—	—	—	—	—	—	—	—	1
	25—44	2	3	—	—	2	—	2	—	3	—
	45—64	16	15	10	16	14	6	13	34	30	25
	65—74	26	19	29	12	20	29	24	40	46	26
	over 75	25	13	12	17	20	15	20	32	26	33
Females:	all ages	112	89	107	101	114	124	109	145	183	147
	under 25	—	—	1	—	1	—	—	1	1	2
	25—44	1	1	4	1	1	—	—	—	1	1
	45—64	21	29	28	21	28	24	30	33	46	29
	65—74	55	31	34	43	44	47	50	61	69	59
	over 75	35	28	40	36	40	53	29	50	66	56

Table I

MORTALITY FIGURES WITH DIABETES GIVEN AS A CAUSE OF DEATH

FOR THE MALTESE POPULATION DURING THE PERIOD 1963-1972

(a) Effects of the menopause: It has been suggested (Oakley et al. 1973) that the menopause is responsible for the rising incidence of diabetes in women. This may be true, at least partly, although no known mechanism has so far been defined and no noticeable change in the severity of diabetes in established cases occurs at the menopause. Furthermore, change in the sex prevalence ratio occurs well before the menopause at approximately the age of 35-40 years and lasts until approximately the seventies.

(b) Effects of Parity: The relationship between diabetes and parity is not clear cut. The fact that a family history of diabetes is less common in highly multiparous women may mean that pregnancy may provoke DM in women whose genetic tendency to the disease is not strong. This is in line with the idea that each pregnancy places a progressive demand on the maternal beta-cells and the insulin secretory system, and that pregnancy is a state of relative insulin resistance. Normal women tolerate pregnancy without significant alteration in carbohydrate tolerance. Women with a marginal pancreatic reserve develop an abnormal tolerance or gestational diabetes. As many as one pregnant woman out of 116 fall into this category. While the diabetes usually clears after delivery, 28% of such women have frank DM after 5 years and by 16 years 52% have permanent disease. The risk of impaired carbohydrate tolerance rises with successive pregnancies. A woman who has had five pregnancies has a three times chance of developing DM as the risk found in a nulliparous individual This increased risk could be result of the fact that during the course of a normal pregnancy extra insulin is needed because of:

i. maternal insulin having an abbreviated biological life due to the ability of the placenta to degenerate insulin.

ii. maternal tissue becomes resistant to insulin because of circulating placental antagonists like progesterone, oestrogens and human placental lactogen. (Fajans et al. 1976).

OBESITY AND DIET: Diabetes is more common in fat people than in lean. Diabetics are, on average, overweight and obesity is associated with insulin insensitivity. Zammit Maempel although he did not study the factor adequately elicited an increased history of overeating in diabetics when compared with controls. He also noted that 60% of diabetics in Malta were obese. These facts point towards the importance of obesity in the causation of DM.

Young diabetics are not as a rlue overweight but those over the age of 45 years at the time of diagnosis are as a rule about 15% over their expected weight. Another way of expressing the same finding is to say that half of the diabetics diagnosed over the age of 45 exceed their expected weight by 10%, compared with only a fourth of non-diabetics. As mentioned above, obesity is accompanied by insensitivity to insulin. Insensitivity of muscle and adipose tissue to insulin, hypertrophy of the pancreatic islets, higher basal insulin levels and an exagerated insulin response to glucose all characterise obesity and theoretically can be linked into a cycle which eventually results in DM. The messenger that transmits to the beta-cell that obesity is present and hence more insulin is required defies defenition at present.

In addition, it has long been known that reduction in weight of the obese diabetic leads to an amelioration of the condition. Actually this improvement appears before there is any significant loss of weight and is probably due to restriction of a carbohydrate intake. Whether the nature of dietary carbohydrate plays a role in the pathogenesis of diabetes mellitus is subject to debate.

INHERITANCE: A family tendency to diabetes undoubtedly exists, but it is not understood how these inherited factors operate. They may in fact be less important than is usually assumed. The evidence that genetic factors have some importance comes from:

(1) comparisons of family history of diabetics and normals

(2) twin studies, and

(3) remarkable pedigrees (the observation that diabetes occurs in successive generations in certain families).

The mode of inheritance of DM is still debatable, and the only theory which at present is consistent with present knowledge is that inheritance of DM depends upon several factors. Zammit Maempel elicited a positive family history of the disease in maltese diabetics as compared to control glycosurics and non-glycosuric diabetics.

OTHER AETHIOLOGICAL FACTORS:

Stress states have been associated with hyperglycaemia and glycosuria, an effect mediated by a generalized activation of the sympathetic nervous system. Even the mild stress of simple exercise has been associated with inhibition of insulin secretion, raised levels of glucagon and accelerated glucose production. It would appear that there is a continuation from the physiological response to exercise to the pathologic stress state, variously described to include trauma, surgery, burns, shock and myocardial infraction.

Though the role of infectious processes in the aetiology of permanent DM has not been fully established, infection is an important factor affecting carbohydate tolerance. Inflammatory lesions exert their effects on intermediary metabolism either by involving specific tissues such as the pancreas and liver; or indirectly by altering the body hormonal milieu. This factor may in part explain the seasonal occurence of DM, its geographical distribution and coincidence of upper respiratory tract infections in newly diagnosed cases.

Diabetics have a higher incidence of autoimmune diseases such as Idiopathic Addison's Disease, Pernicious anaemia and chronic thyroiditis. This observation suggested a possible autoimmune basis for DM. The development of a form of experimental DM in animals using the techniques of immunology and the discovery of tissue specific antibodies in acute human clinical diabetes (Malony & Coval, 1955) have provided support for the concept of a possible immune mechanism in DM.

Other diseases and some rare syndromes are associated with a higher incidence of DM. Patients with gout have been observed to have a higher incidence of DM. It has been suggested that uric acid or a substance resembling it might have an alloxan-like action on the beta-cells of the pancreatic islets, so producing DM. Chronic renal disease and hypertension are associated with hyperuricaemia, however, whilst an increased prevalence of DM in persons with hypertension has been reported, chronic renal disease is not known to proceed DM in an increased prevalence.

In conclusion one can say that the aetiology of diabetes mellitus is complicated and in the great majority of cases there appears to be no single cause for the condition. A multiplicity of factors interact together to cause the disease. The prevalence of the disease in the Maltese Islands is higher than most other European countries. Though Zammit Maempel's pilot survey has helped to assess the relationship to age and sex, much more work is required to relate the disease to variables such as occupation, genetics, fertility and diet. The islands constitute a closed community which should make a local survey very feasable. Once the incidence of DM is firmly established for the total population, comparison with the incidence in special groups of this population may be indicated. This can take the form of a study of prevalence in a religious community whose dietery consumption may be accurately determined. The incidence of diabetes in descendants of first cousin marriages may also be undertaken to determine any genetic influence on the increased prevalence.

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THE "TEN COMMANDMENTS OF PSYCHIATRY"

Dr. Paul Cassar, M.D., B.Sc., D.P.M.

I was recently discussing the symptomatology of a psychiatric case with a colleague in the presence of a final year medical student. When my colleague left, the student confessed that he felt bewildered by what he called the "abstract" nature of mental disorder and its manifestations. He intends devoting himself to general practice and as he is well aware that a good proportion of his future patients will be psychiatric ones, he has asked me whether it is possible for me to reduce the subject matter of psychiatric guidelines and thus spare him the pitfalls of any fumbling approaches to his patients.

I have attemped to lay down what I consider to be the essential requirements in the following "Ten Commandments of Phychiatry". I must, however, hasten to add that they are based solely on my personal experience which, although extending over thirty years in the field of clinical psychiatry, claims no dogmatic authority; in fact, they may differ from those of another psychiatrist with the same range and length of experience.

1. Listen to what the patient has to say not only to obtain his medical history but also to find out what are his own views about the cause and nature of his illness. These views very often need to be corrected and unless this is done you will not succeed in your treatment.

2. It is not sufficient to diagnose the nature and gravity of the patient's neurosis or psychosis; it is also essential to evaluate the underlying personality with its assets and liabilities. The patient's disorder may, in fact, be the expression of a psychopathic or immature personality.

3. Physical illness may cause, or contribute to, or accompany mental illness. Therefore, carry out a full examination of the patient's physical state without, however, over investigating it as by doing so you may give rise to superadded iatrogenic symtoms of a hypochondriacal nature.

4. You must endeavour to inspire your depressed patient with a hope of recovery but you must never tell him that it is up to him "to throw it off". He cannot "throw it off" and any words to that effect may make him more desperate and even drive him to self-destruction.

5. Never trust a suicidal patient and do not let his relatives convince you that he will not harm himself because he is a religious person or because he has not the courage to kill himself.

6. Do not fall into the temptation of prescribing the "newest" pharmacological product immediately it appears on the market. Not every "new" product is necessarily more effective that an "old" well-tried one. It has been estimated that among the hundreds of new products introduced yearly, the great majority are merely variations of already existing basic products.

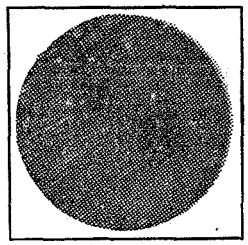
7. Medication is not the only form of treatment for the psychiatric patient. His illness may be a reaction to a real unpleasant life situation (disabling physical disease, family troubles, etc). If this situation cannot be changed, you must help the patient to come to terms with it by accepting it, tolerating it and adapting his life to it.

8. You will often come across patients who ascribe their illness to the "stresses of modern life". While reactive anxiety and depression do sometimes occur (see No. 7), you will find that in many cases of mental morbidity environmental factors play no part and that the illness is endogenously determined. The apparently increased incidence of psychiatric illnesses is due to the increased awareness of their existence and the greater availability of psychiatric services in the community.

9. Be on your guard against interested parties who ask you to examine a relative for the issue of a certificate of testamentary capacity. You will be wise to suggest a second opinion from a psychiatrist to avoid falling into a trap and becoming involved in court proceedings months or years after you have issued your certificate.

10. Study the Mental Health Act (1976) thoroughly as you may be responsible for a mistaken certification of a mental patient and render yourself liable to legal proceedings and the penalties prescribed by the Medical Council.

One of the things she may not ask your advice about



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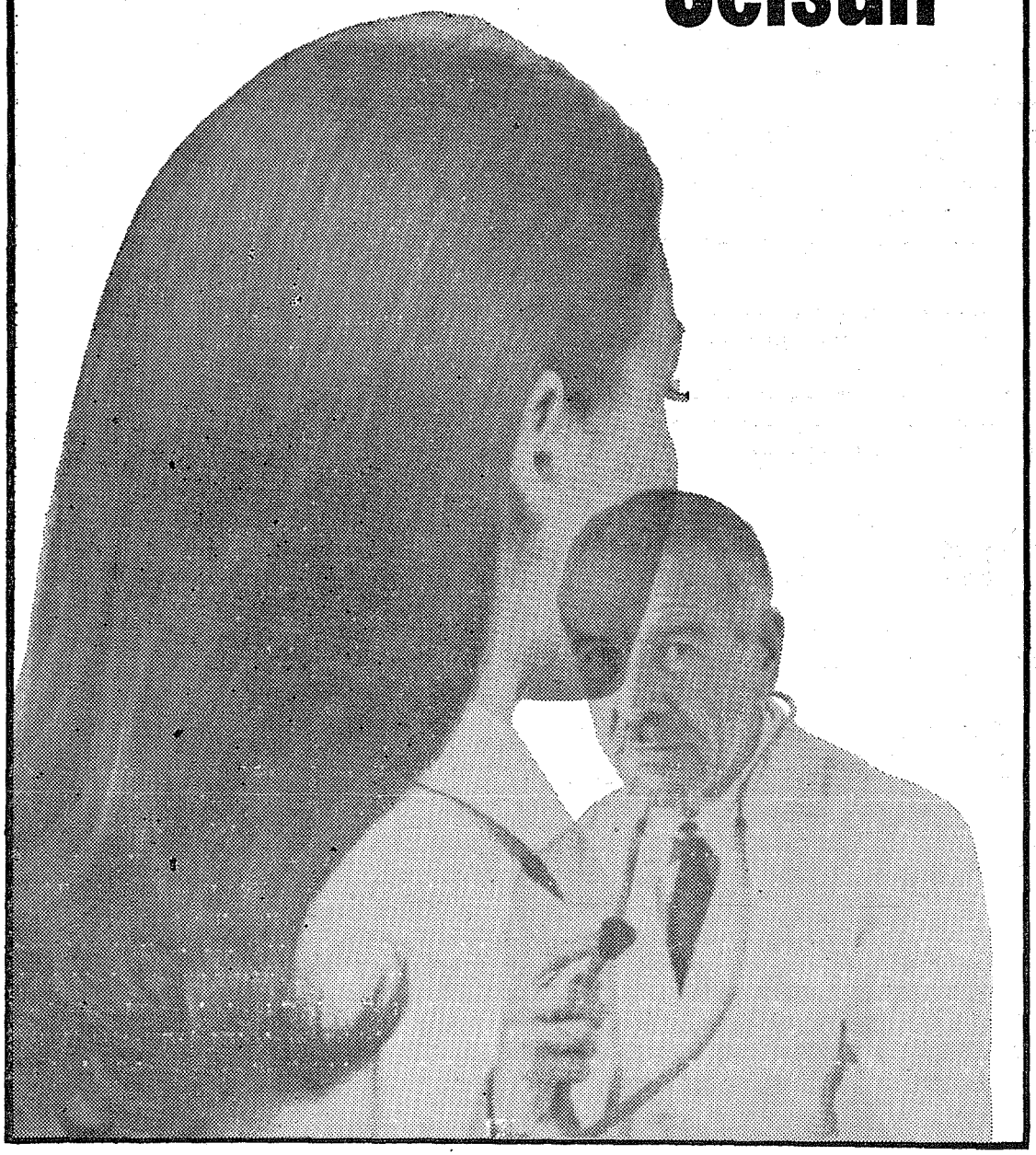

PSYCHOLOGICAL ASPECTS OF ROAD TRAFFIC ACCIDENTS

By: M. BORG, T. TILNEY AND A. VASSALLO

Introduction

The mortality and morbidity from road traffic accidents are increasing annually in nearly all the developed countries. Whereas transport statisticians are able to show a reduction in road accident casualties in relation to the total number of motor vehicles, to the estimated annual number of kilometers driven, to traffic density and to various other criteria; public health authorities point out that the total number of deaths and injuries from road traffic accidents continues to increase and to become more and more important in the overall public health problem. It is likely that the worldwide annual number of deaths from road traffic accidents will reach a quarter of a million and the number of injuries exceed 10 million within a very few years.

In certain countries, for example U.S.A., deaths from road traffic accidents exceed those from T.B., Polio, Dyphtheria and Diabetes Mellitus put together. (WHO 1961).

Human factors must clearly be of great importance in accidents, and improved understanding of the way in which they produce their effects should lead to practical proposals for action whereby the number of road accidents could be reduced. Because of the complexity of the problem, a multi-disciplinary approach is called for, requiring the participation of doctors, psychologists, sociologists, lawyers, vehicle designers, and highway engineers.

Investigation

Road accidents are seldom truly accidental, in the sense that they are usually due not purely to chance but to a combination of factors that are rarely revealed by official reports and statistics. The main concern of the authorities is to establish the medical cause of death or injury and to ascertain whether traffic laws were violated. Thus, a fatal accident may be ascribed to dangerous driving, but while this superficial reason may satisfy a court, it contributes nothing to the prevention of future accidents. A number of questions remain. Was the car in a sound mechanical state? Were the brakes and steering efficient? If not, who was responsible for their inefficiency — the owner, the servicing garage, or the manufacturer? Was the dangerous driving only apparent — the result perhaps of a mechanical failure of a part of the vehicle owing to metal fatigue, faulty manufacture, or some prior accident? Was the road surface greasy, or did the car hit a pothole? What was the range of the vision at the scene of the accident? What were the weather conditions, the lighting, the width of the road and its gradient? Did the driver's actions result from the unexpected behaviour of another car? When all these questions have been asked there remain those relating to the physical and psychological fitness of the driver. Was he ill? Had he been receiving medication with drugs? Had he taken alchohol? Was he depressed or suicidal? Was he divorced, widowed, or a bachelor? Had he a history of crime or aggression?

To find answers to these questions, a team of experts would have to be employed for several weeks at considerable cost. Yet it is only investigations of this kind that will provide the basis for effective road safety measures.

Psychology

A large number of studies have been carried out to determine the effect of psychological variables on driving performances. The psychological factors can be divided into three main groups:

1. Stable individual characteristics such as somatype, intelligence, personality, etc.

2. Age dependant factors including psychological and physiological changes with age and experience.

3. Temporary variables including illnesses of short duration, fatigue, intoxication and temporary mood changes.

What follows is a brief survey of the principal factors which pschologically influence the driver.

Antisocial Behaviour Patters: Psychologists claim that due to feelings of separation and of protection experienced in the driving compartment of the vehicle, previously unexperienced competative and aggresive tendencies are provoked in the driver. This is said to be especial-

ly marked in male drivers, possibly explaining why accidents caused by excessive speed are very much commoner with male drivers. This may also reflect the fact that competative element plays a far greater part in the male that in the female character. It has also been suggested that the urge to travel at high speeds is associated with the need of the male to assert his vitality. In fact, in 25% of traffic infringements studied, the driver had a suggestive personality disorder.

Marital Status: Studies in the USA (Average 1949-51, US Department of Health, Education and Welfare (1958), Accidental Injury Statistics, Washington DC, Gov. Printing Office) showed that a study from death rates/100,000 population from motor vehicles accidents by age, sex and marital status, the death rates are lowest for singles, rises with widowers, and is highest in divorced individuals.

"Accident Proness": This is a much discussed topic, but present statistical evidence does not indicate unequivocally that there are some persons **with a constantly greater liability to accidents than average.**

Cultural Influence: In a study made in Italy (in a northern and a southern town) it was found that there were more accidents in the industrial North of Italy, but the proportion of accidents per car was higher in the non-industrial Southern region.

These finding are said to reflect the different temperamental variations in character which are known to exists between the inhabitants of the two areas.

Driving Skills: Driving requires training and is maintained by practice. The main psychological requirement is CAPACITY FOR VIGILANT ATTENTION and ANTICIPATION.

M.L. Chipman and Peter Morgan (1975) found that demerit points (system used in Canada and America) are a measure of vulnerability to both collisions and traffic convictions in the future and appears to be more sensitive that traits traditionally used to predict risk of accident such as age, sex, class of licence and history of previous accidents. This study showed little change with age in most demerit stretch for collision rates, the reason may be that driver control programmes begin too late to be effective among young drivers (usually started when he has 9 pts). It was also found that drivers above the 9 pts have a twice as much risk of having an accident than those with no points. Furthermore, drivers below 25 years with 3 — 5 points have substantially higher risk of collision than those with no points. McFarland, RA, also found that people below 25 years of age who have an accident are more blame worthy for the accident than drivers of an older age group.

Thus it can be concluded that demerit points are the one thing the driver can control and a young person able to avoid demerit points is able to avoid collisions as one in the older age group.

Fatigue.

Fatigue, in both its physical and emotional components, is believed to be an important factor in increasing risk of accident involvement. Many cases have been reported of accidents occuring as a result of loss of attention or falling asleep while driving. Continuous physical work, particularly when the muscles are in a state of contraction, leads inevitably to the onset of fatigue. Unsatisfactory driving posture, unnecessary amount of effort to operate the controls, considerably shortens the interval before fatigue sets in. On the other hand, the onset of fatigue is postponed by frequent periods of resting. It may follow that in tasks such as driving, which require unremitting attention, vigilance may fail and may be followed by inaccuracy, poor judgement and sluggish reactions, if the task is allowed to continue for too long without respite.

The degree of sensory stimulation is also important in maintaining alertness, thereby facilitating perception, co-ordination and other higher brain functions. Diminution in sensory stimulation which is liable to occur during long journeys on monotonous motorways, inhibits these functions. It has been suggested that there is an optimum range of environmental stress and that deterioration in driving performance sets in both above and below this range as a result of fatigue. The onset of fatigue is also influenced by "arcadian" fluctuations in physiological activity.

Another phenomenon which has been detected after prolonged performance of a complex task such as driving, is the inability to distribute attention appropriately. Too much attention may be paid to one part of the task, and insufficient to another. This kind of disturbance of attention has also been noted in the case of alcoholic intoxication.

Too much noise can certainly lead to the earlier onset of fatigue. The effects of fatigue on vision are also important.

Deprivation of sleep is, of course, one of the commonest causes of fatigue. Its importance in increasing risk of accident, particularly in young people.

Illness, stress and accidents: There is no doubt that certain medical conditions, such as

cardiovascular disorders, hypoglycaemic attacks, epilepsy, and disorders of vestibular function, can cause accidents. Nevertheless, it is generally agreed that the sudden onset of illness while driving is responsible for only a small proportion of road accidents, the figures reported in different countries varying from 0.1% to 1%. Since certain medical requirements have usually to be satisfied before a driving licence is issued, those unfit to drive are to some extent kept off the roads.

The Influence of Drugs: From the little evidence available, people who abuse drugs appear no more likely to be involved in road accidents than normal people, perhaps because they are unwilling to drive during the period of euphoria. Drugs taken on medical instructions are of greater interest. Those most likely to reduce driving efficiency include narcotics, hypnotics and sedatives, analgesics, stimulants, tranquillizers, anticonvulsants, antihistamines, ganglion-blocking agents, and muscle relaxants. The effects produced may be enhanced when drugs are taken in conjuction with alcohol. The initial period of drug-taking is the most dangerous, since it takes time to become accustomed to the effects of drugs, and the dose may need adjusting.

The Driver and his Environment: Vehicle design, road conditions, and the weather are examples of environmental factors that effect driving and increase the risk of accidents. Less obviously, the "perceptual load", i.e., the amount of sensory information received by the brain, is also an important environmental factor. There may be an excess of such information, as in driving in a crowded street, or not enough, as in driving on motorways. In the first case, a reduction in the information load, eg., by providing barriers at the edge of the pavement to control the movements of pedestrians, may result in a reduction in accidents; in the second, lateral "rumble" strips can be incorporated in the road surface to reduce the monotony.

Much has been written on road design as a factor in accident prevention. The segregation of pedestrians from traffic in urban areas, the construction of by-passes, and the careful design of intersections have all been shown to reduce the number of accidents. Road surfaces should be constructed to have adequate skid resistance under wet conditions. Speed limits have been shown to be valuable in reducing accidents in urban areas, and there is much evidence in favour of speed limits on motorways. The general effect of a speed limit on motorways, say 115 km/h (70 mls/h), is to produce more uniform speeds, and this in turn makes accidents less likely to occur.

Vehicle design has been the subject of a good deal of criticism, not only because of the lion of the occupants and of other road users in the event of an accident, but also because designers have failed to take various human factors into account. Recently the science of ergonomics, or "human engineering", has been applied with considerable success to the design of vehicles that are safe to drive. From the point of view of ergonomics, the driver is considered as one of the components of a complete system, the instruments being extensions of his nervous system and the controls extensions of his hands and feet.

Are licencing procedures satisfactory?

In most developed countries, a driver is required to hold a valid driving licence. The procedure that has to be gone through to obtain a licence is aimed at eliminating those who are unfit to drive.

Road accidents are not due purely to chance. They can be reduced in number if suitable precautions are taken. Improvements to roads, the replanning of towns, the safer design of vehicles, an increased educational effort, improvement in communication and in ambulance services, and a revision of the legislation in the light of research on human behaviour on the road would all materially reduce the injury and death dates.

Doctors must play their part in health education of drivers, bearing in mind effects of diseases and drugs. Drug manufacturers should be required to investigate the effects of new drugs on driving performance before they are marketed, and if any effects are detected due warning should be given.

Such improvements would be expensive, but against their cost must be set the very great and ever rising cost to the community of the deaths of many able and productive citizens, of the prolonged absence from work of the injured, and of the proportion of hospital services utilized — to state the problem in its most materialistic terms. The cost of road safety is the cost of the social revolution brought about by the motor vehicle which has enlarged the scope of man's life and improved his standard of living. These advantages must be paid for, either in money or in lives.

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RENAL NEOPLASMS — CLINICAL CASE

C. Savona Ventura

CASE HISTORY: A 25-year old female patient was referred to St. Luke's Hospital with a history of hypertension detected 4 months previously when the patient visited her G.P. for a sore throat. She was then put on Bendrofluozide and a salt-free diet pending investigations. Systemic enquiry of the patient only revealed frequent frontal headaches, slight dyspnoea on exertion and a slight ache over her loins. She gave no history of haematuria or dysuria, no ankle oedema or puffiness around the eyes, no loss of weight, nausea or vomiting. The patient had been operated two years previously for a lump in the breast which histology showed to be due to mammary dysplasia. There were no remarkable features in her family history.

EXAMINATION: Her general physical condition was satisfactory, except for clinically detectable anaemia. Her tonsils were not enlarged of inflamed and there was no cervical lymphadenopathy. Her B.P. was 150/90. Pulse was regular at 96/minute and heart sounds were normal with no murmurs or extra sounds. Her JVP was not raised. Her respiration was regular with chest expansion equal on both sides. There were no signs of mediastinal shift. Breath sounds were vesicular and adventitious sounds were heard. Percussion was normally resonant.

The abdomen was not distended and moved symetrically with respiration. On palpation there was slight tenderness in the right iliac region and the right kidney was felt to be enlarged. There was no hepatosplenomegaly and no evidence of ascites.

The patient was kept at S.L.H. for a period of investigation of ten days during which she was noted to be occasionally pyrexic. Her diastolic pressure remained in the region of 90-100 mmHg. The patient was discharged on Bendrofluozide and was told to attend the outpatient department pending completion of her investigations.

INVESTIGATIONS: **Blood** — Haemoglobin 11.3 mg%; white cell count 9,300/mm^3 with a differential count of 69% neutrophils, 1% eosinophils, 21% lymphocytes and 9% monocytes. The blood picture showed slight hypochromia with anisocytosis and poikilocytosis. The neutrophil series exhibited a shift to the left. Platlets were normally represented. Serum protein electrophoresis showed no significant departure from the normal pattern with a total protein of 6.8 gm/dl.

Urine — pH 6.0, protein and glucose absent (a repeat showed traces of protein). Microscopy showed rare RBC's occasionally WBC's and a few transitional cells. Culture revealed a streptococcal species.

Renal function tests — Blood urea 17 mg%, serum creasinine 1.0 mg% with a creatinine clearance of 69.

Radiology — A chest X-ray showed no abnormalities. A plain abdomen film showed the right kidney to be obscured by an indistinct shadow of soft density. An intravenous pyelogram (IVP) showed the right pelvicalyceal system to be displaced by pressure from above. This was caused by a large space-occupying mass growing near the upper pole of the kidney. The left kidney, pelvis and ureter, and the bladder were normal.

DIFFERENTIAL DIAGNOSIS: The tentative diagnosis at this point was that of a **renal tumour.**

Truly benign tumours of the kidney are so rare that it is considered best to treat all kidney neoplasms detected clinically as malignant. In general, benign tumours are trivial and clinically insignificant. The angiomas may however give rise to profuse haematuria. The commoner malignant tumours of the kidney are characteristically seen in two periods of life: during infancy below the age of 7 years, and during adult life after the age of 40 years. Between the ages of seven and forty malignant tumours are unusual and present a totally different pathology.

(TABLE 1).

The clinical presentation of renal tumours depends on their pathology. The presence of blood in the urine is usually noticed by the patient and makes him seek early advice. Its transient or intermittent nature is however an important cause for delay. Pain is not a prominent feature and is usually of a continuous dull aching character producing discomfort or a feeling of weight in the loin. Renal colic is rare and is often due to the passage of blood clots through the ureter. An intermittent pyrexia with an evening temperature reaching 103°F may be a feature. A swelling in the loin may be a relatively late presentation in adult tumours but is the prime presenting feature in the nephroblastoma. A raised sedimentation rate (ESR), hypertension or polycythaemia which have no ready explanation should all raise suspicion of a renal tumour.

Along with the differential diagnosis of a renal tumour one must consider a **solitary renal cyst.** These are usually globular and unilateral. The patient usually complains of a painless mass. This is smooth, globular and tense, Large cysts may cause a dull ache over the loin. The diagnosis depends on the pyelogram which demonstrates a globular mass with elongation and distortion of adjoining calyces. An encapsulated neoplasm may produce an identical picture making diagnosis difficult without the use of an arteriogram.

Adrenal tumours, particularly if malignant, may produce a pyelogram showing displacement of the upper pole of the kidney and possibly a distortion of the pevicalyceal system. Three tumours may originate from the adrenal medulla. The **ganglioneuroma** may be found in 15% of cases. It is a symptomless relatively benign tumour which may occur at any age and may grow to a large size. Affecting children below the age of five years is the highly malignant **neuroblastoma.** This usually presents as an abdominal swelling with signs and symptoms attributable to metastasis and general effects of malignancy. The common adrenal medulla tumour affecting adults it the **phaeochromocytoma** which may attain a diameter of about 5 cm. This produces intermittent or continuous catecholamine secretion which gives rise to the symptoms of paroxysmal or persistent hypertension, headache, palpitations, vomiting, dyspnoea, weakness and pallor.

Tumours of the adrenal cortex are usually functional. These include the small rare adrenocortical adenoma which causes features of **Primary Aldosteronism.** Sodium retention and a fall in potassium give rise to the features of hypertension and episodic muscular weakness associated with polyuria and polydypsia. Another functioning tumour of the adrenal cortex is that which may give rise to **Cushing's syndrome** or the **Adrenogentital syndrome.** These very rarely may be malignant large carcinomas weighing as much as 4,000 gm. Extension beyond the adrenal capsule with invasion of the kidney may occur with the more aggressive tumours. The benign adrenomas are well encapsulated tumours which may reach a mass of 200 gm.

OPERATION: The patient was readmitted ten days later for a right-sided transperitoneal nephrectomy. During operation a large tumour measuring 18 x 12 x 12 cm. overlying the lower pole of the right kidney was found. The tumour was attached to the inferior vena cava causing an aneurism containing a thrombus. A radical nephrectomy was performed and the tumour mass affecting the IVC was removed by resection of the anterior wall of the vein. Major bleeding could not be prevented and was controlled by massive blood transfusion and fluid infusion. The anterior wall of the IVC was repaired and mesh sutures were placed in the lower abdominal IVC to restrict embolism.

PATHOLOGY: On incision the renal tumour was shown to be bordered laterally by surviving renal tissue. The tumour was yellowish in ap-

TABLE 2: CLASSIFICATION & STAGING OF NON-HODGKIN LYMPHOMAS

FOLLICUAR LYMPHOMAS	DIFFUSE LYMPHOMAS	STAGING
Small lmphoid cell	Small lymphoid cell varients 1. Small lymphocytic 2. SL with plasmacytoid differentiation 3. Ttypical SL 4. Convoluted lymphocytic (thymic)	STAGE O:- no detectable disease STAGE I:- localization to single node or adjacent group of nodes.
Mixed lymphoid cell	Mixed lymphoid cell	STAGE II:- involvement of more than one region of nodes but on one side of diaphragm. A) without general symptoms B) with general symptoms.
Large lymphoid cell	Large lymphoid cell Varients 1. Histiocytic 2. Burkitt's 3. Mycosis fungoides 4. Undefined	STAGE III:- involvement of both sides of diaphragm. A) without general symptoms B) with general symptoms STAGE IV:- generalized disease demonstrable in bone, lungs, GIT, skin or kidneys.

pearance with extensive areas of haemorrhage. Microscopy showed a sarcomatous tumour with lymphoblasts as the component cells. There was extension into the inferior vena cava as evident from the microscopy of the thrombotic mass.

DIAGNOSIS: Diffuse Lymphocytic Lymphoma of the right kidney extending to the inferior vena cava.

POST-OPERATION MANAGEMENT: The patient did very well being covered with fluid therapy and broad spectrum antibiotics. Her subsequent anaemia was treated with blood transfusion and iron tablet therapy. She was discharged 19 days after operation and was referred for future management with chemotherapy.

LYMPHOMAS: Most patients with Lymphomas present as otherwise healthy individuals with painless enlargement of a single or group of lymphnodes usually in the cervical chain. Occasionally, evidence of extranodal involvement is already present and indeed 25% of patients have initial complaints referable to hepatosplenomegaly. With more advanced disease, systemic manifestation including fever, night sweats, marked weight loss, weakness and anaemia may be evident. As would be expected, the manifestation of advanced widespread disease is truly protean. Involvement of the gastrointestinal tract may produce diarrhoea, sometimes with the full blown picture of the malabsorption syndrome. Multiple osteolytic lesions with bone pains and pathological fractures may occur. Renal enlargement may result from direct lymphomatous infiltration or from hydronephrosis resulting from obstruction to the lower urinary tract by tumour. Lymphomatous infiltration of the kidney as evidenced at necropsy was found in 85% of non-Hodgkin's lymphomas, the majority (73%) being Burkitt's Lymphoma. Infiltration in Hodgkin Disease was found in 10% of cases. Invasion of the kidney sufficient to cause renal failure is practically confined to the lymphosarcoma and the reticulum cell sarcoma, and is the cause of death in only 0.5% of cases of renal lymphomas.

Nervous system involvement can create a bewildering array of central and peripheral findings. The peripheral blood examination and bone marrow aspiration is in most lymphomas usually normal. Some types of lymphoma, particularly the diffuse lymphocytic lymphomas, are associated with a corresponding leukaemia.

Primary lymphomas of various other organs have also been reported, however documented primary lymphomas of the kidney is rare. Therefore the unicentric theory commonly accepted for other lymphomas has been questioned in the case of renal involvement. Until 1956 it was assumed that lymphoma of the kidney was not primary. In that year Knoepp reported a case of solitary lymphoma in the right kidney which radical resection apparently cured. Other authors have since documented cases which support the unicentric theory of lymphomastous lesion in the kidney.

Prognosis depends on the histological pattern and staging of the disease (TABLE 2). The overall 5 year survival rate is about 25% being worse with stage IV disease with a diffuse histological pattern. Radiotherapy and chemotherapy have however in recent years altered considerably the natural course of many of the lymphomas.

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TABLE 1: CLASSIFICATION OF RENAL MALIGNANT NEOPLASMS

NEOPLASM	AGE	INCIDENCE	PATHOLOGY
Adenocarcinoma (Grawitz tumour)	55-60	80%	Cubical or polyhedral cells arranged as solid alveoli, papillary cysts of tubules. The strome is scanty and rich in large blood vessels. Various degrees of anaplasia may occur.
Nephroblastoma (Wilms's tumour)	1-4	8%	Primitive or abortive glomeruli with poorly formed Bowman's spaces and abortive tubules all enclosed in a spindle cell stroma including cells of muscle, fat, bone and cartilage.
Malignant haemartoma		2%	Connective tissue malignant tumours of fibrous tissue, fat, smooth muscle, etc. Various degrees of anaplasia may be seen.
Sarcomas			
fibrosarcoma			
liposarcoma			
leomyosarcoma			
osteosarcoma			
neurofibrosarcoma			
rhabdomyosarcoma			
Lymphosarcoma and leukaemic deposits		50% of generalized disease	Involvement of the renal parenchyma with the malignant lymphoid cells, usually associated with stage IV disease.
Metastatic carcinoma from Lungs	variable	8% of malignant disease	Resemble the primary carcinoma.
Breast			
Stomach			

MENTAL SUBNORMALITY

(J. Schembri. D. Spiteri. I. Vella)

The Year of the Child is a good opportunity to review some of the epidemiological aspects and problems facing the mentally retarded. These are people who mentally grow very slowly and thus remain to all intents and purposes children for most if not all their life.

Size of the Problem: The prevalence of subnormality is quite difficult to determine precisely. There are many reasons for this:

There are no sharp distinctions between the mentally retarded and the normal population. The distribution of I.Q. scores follows a normal (Gaussian) distribution curve:

Grading	% pop.	I.Q.	Mental
Genius.	0.13.	148+	23+
Very superior	2.13.	132-148.	21-23.
Superior.	13.6.	116-132.	18-21.
AVERAGE.	68.26.	84-116.	13-18.
Subnormal. (ESN)	13.6.	68-84.	11-13.
	2.13.	52-68.	8-11.
Severly subnormal	0.13.	52-	8-

I.Q. testing has a limited value in recognising subnormality. The procedure depends on the formulation, suitability, validity, and reliability of the test; the mood and motivation of both child and psychologist; and the child — psychologist relationship.

Bearing in mind that intelligence has been described as "the overall ability to perceive significantly; to remember selectively and anticipate eventualities and act appropriately" it is obvious that a thing so difficult to define is impossible to measure.

Furthermore, I.Q. scores do not tally with the person's ability to deal successfully with real life. Such variables as other physical defects, emotional and behavioral instability; family structure, education and financial position; and the facilities and opportunities available in the socio-economic climate of that part of the country have to be considered.

Many Subnormal children are easily detected especially if they have some marker physical abnormality eg Down's syndrome. But in the less severe type of subnormality in particular the educationally subnormal (ESN) the difference in performance from peers in early life is barely noticeable. However, as the normals grow at a faster rate mentally, they leave the subnormal child more and more behind, until the difference becomes obvious in the later years of school. Thus some cases are unfortunately detected as late as 9-10 years. On the other hand the severer the handicap the greater the tendency to die earlier due mostly to associated physical defects. Thus it is readily apparent that the prevalance of subnormality varies considerably with the age of the population considered.

It is also found that most educationally subnormals easily find their place in society, get a job and start a family. Thus the prevalance of subnormality drops precipitituosly with the school leaving age. It should never be forgotten that most subnormal children improve slowly with time — even their I.Q. scores tend to get higher.

None the less, many people would agree that the prevalence of subnormality in the general poulation is around 3%. At infancy the severly subnormals who can be detected number around 1%. By age 5 to 7 this drops to 0.4%. This age prevalence then becomes increasingly inflated by the less severely subnormal till a maximum is reached at age 10-16. After school-leaving age, for reasons explained above, this drops drastically to a level which remains quite stable thereafter with increasing age.

It is being increasingly recognised that in all cases early special training can make even the most severely handicapped more independent as regards feeding, clothing, and toilet. Most can be trained to be ambulant and with minimal behavioral and emotional problems. Understanding and speech can be developed to a practical level. The ultimate aim of attaining at least a partial measure of financial self-sufficiency is a goal within the reach of many such people.

Special considerations in Malta.

It is difficult to obtain statistics to assess the size of the mentally handicapped population in Malta. Some of the reasons for this have been discussed above. Still some measures need to be employed to avoid the presentation of a handicapped child at the lamentably late age of 16 to the authorities with the sole aim of obtaining the pension to which such a person is entitled to at this age! Precious little can be gained by

starting training at this age. Such cases are rare but not unheard of.

Most children present: 1) by the presence of a typical syndrome, or associated medical problem causing the mental handicap to be noticed early, by the paediatrician. 2) Parents may notice a delay in the development of milestones relative to their earlier sibs. 3) Teachers and family doctors will recognise more of those who present later.

By introducing the so-called 'at-risk register' where those expectant mothers with a history of previous children with mental handicap, or familial hereditary disease, or contact with rubella in early pregnancy, or those over 35 years old are entered, it is hoped that more early detection of at least some of these children may be made.

Teachers especially of the kindergarden classes need to be specially trained to be always on the look-out for such children. Also family doctors and paediatricians should not procrastinate decisions about the presence of subnormality in a child. It is known that the earlier that parents know that their child is subnormal, provided that sympathetic discussion of the individual problem is available, the quicker will they accept the situation and their child as he or she is. Otherwise a long period of confusion and disbelief follows with an added risk of refusal of the child. Many such parents may go from specialist to specalist (even abroad) hoping against hope that some miracle cure will be made. The facilities which exist to help them should be made known to them (—before they ask if any exist — a question which a surprising many do not put). One should not allow the parents to become shadows of their former selves, anxious and miserable and dependent on tranquilisers to keep them from going over the edge — a disturbingly common state of affairs. The early education of the parents to channel their love of the child into active and intelligent management of their child's development is essential. This helps overcome the parents' lingering guilt feelings, and dispell the sense of helplessness and incompetence in dealing with their own child. Among the problems that parents bring up frequently are the management of hyperactivity, sexual abuse and the question of their child's future, particularly of what will become of the child when they are dead.

Financial burdens are taken care of through pensions, free drugs, medical care, cheap food and transport to and from school. One should discourage both over-protection (— which may mean keeping the child indoors, hidden away from neighbours and visitors; and keeping the child on a regime meant for babies eg. diapers and bottle feeding for life. —) and from the tendency to push the child beyond his or her capabilities. At present organization of the management of these children involves the following system:

The child is refered to the MENTAL HEALTH CLINIC by parents, teachers, doctors, school psychologist, the at-risk register and the Combined Clinic (Pediatrician, Genetic counsellor and Obstetrician). From the MHC, the child is sent to a normal or special kindergarden and later to a normal or special trade school for preparation for open, home or sheltered employment.

Some problems have still to be overcome. A large problem includes the unavailability of staff like special child psychiatrists and genetic counsellors. Other staff are too few eg qualified teachers, social workers. Still others are as yet under training eg speech therapists, while others have to be brought from abroad eg play therapists. Another large problem is the as yet insufficient number of schools to deal with the increasing demand for entrance into such schools by the increasingly aware public The large waiting lists could cause placement of a child in an inappropriate school with detriment to the child and his or her classmates. Other needs include the as yet unavailability of formal I.Q. tests suitable for Maltese children.

It is to be increasingly expected that the traditional destiny of the mentally handicapped to finish up sooner or later in an institution will become slowly but surely a thing of the past.

Personal communications (1979 * with specials thanks to 3 mothers of mentally handicapped children who allowed us an interview.
Mr. F. Zammit Montebello.
Dr. P. Cassar.
Dr. A. Galea.
Mr. A. Felice.
Miss Ryan.
Mrs. Giuste.

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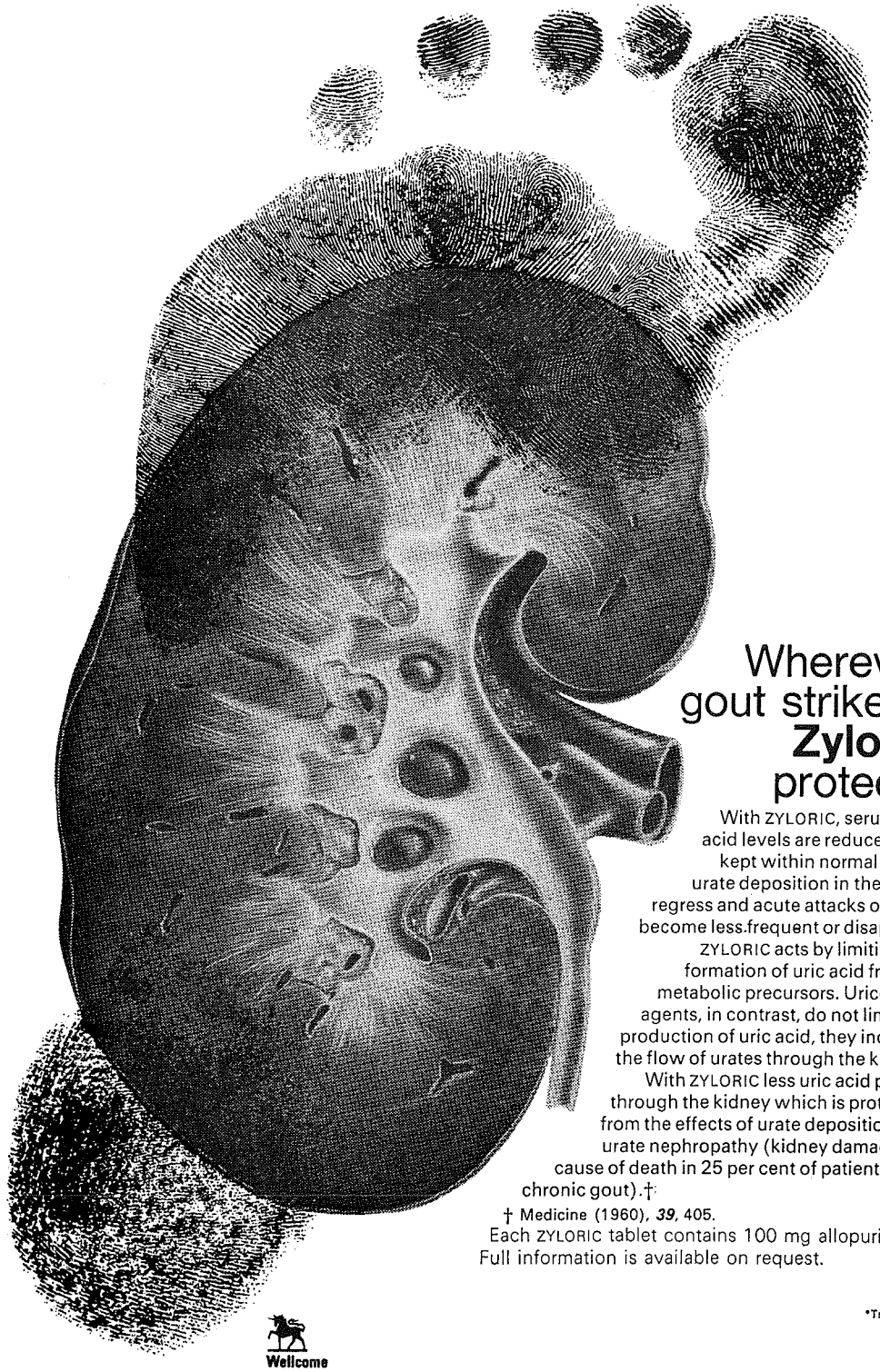

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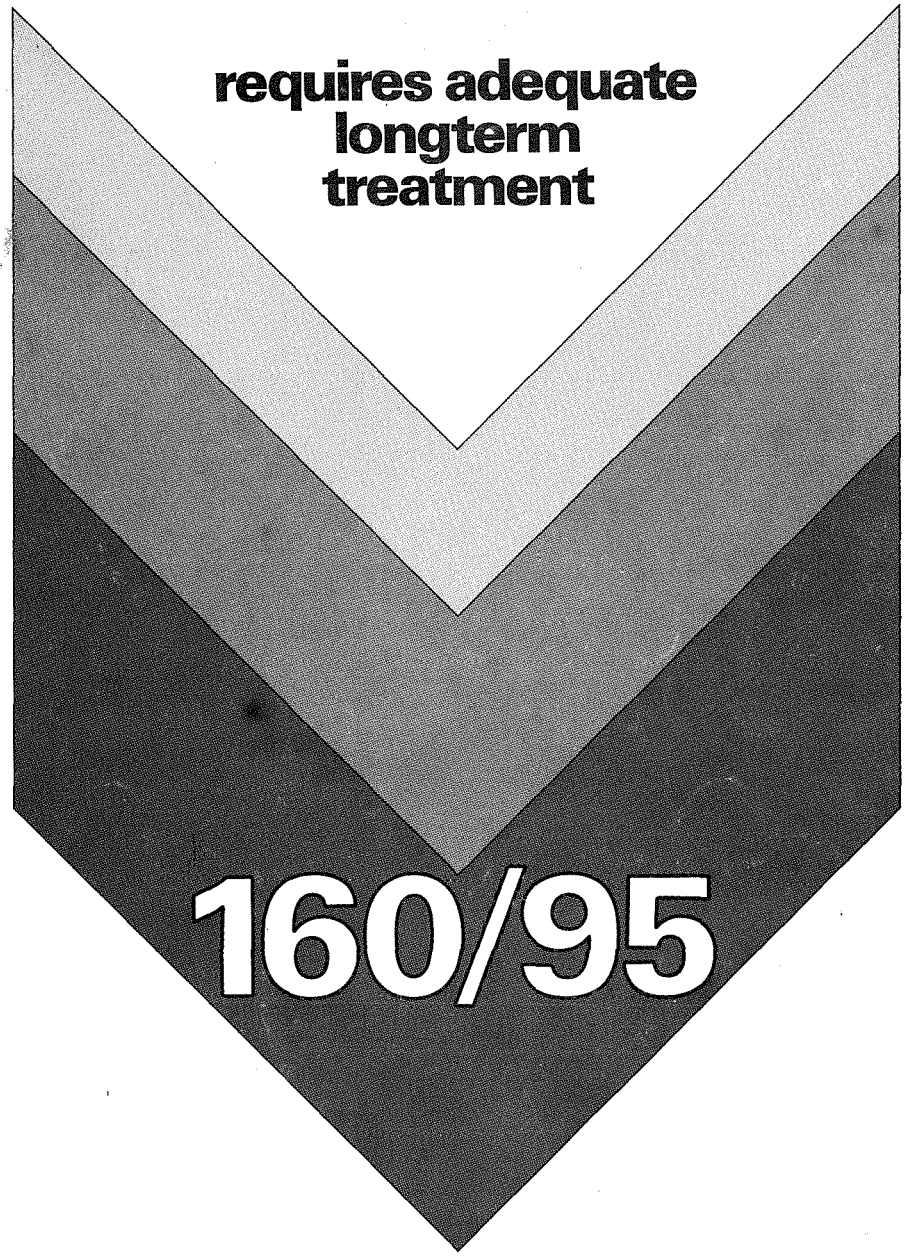

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