may often be best achieved by submucous resection of a deflected portion of the septum itself, most usually in the upper part.

From the above considerations, it is obvious that asthma depends on many diseased conditions, and is in a way rather a symptom than a disease in itself. This may not afford much immediate consolation to the sufferer, but it indicates to the practitioner that it must be analysed and attacked from various sides. If on one side there is failure, an attack may be hopefully made on another, if *undue delay is avoided*. On the strength of the results I have produced, I urge writers on asthma in our textbooks of medicine to place among their foremost instructions that *the nasal condition should be thoroughly investigated and judiciously dealt with*.

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A SURVEY OF PROBABLE PROGNOSTIC FACTORS IN THE TREATMENT OF GENERAL PARALYSIS *

BY

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Most of the data on which this paper is based have been obtained from observations made on some 700 to 800 patients who, while under certificate in the London County Council mental hospitals, received malaria, relapsing fever, sapro-vitan, sulfosin, or tryparsamide, or a combination of any of them, together with subsidiary treatment by novarsenobenzene and the like.

SEX OF THE PATIENT

The first factor I wish to comment upon is that of sex. As is well known from the work of Moore, Solomon, and others, the incidence of neurosyphilis in the female is only one-third of that found in the male, although the nervous systems of both, as shown by the relative percentages of spinal fluid abnormalities, are invaded with equal frequency in the early stages of syphilis. This difference is even greater in women who have had one or more pregnancies, and the greater the number of pregnancies the lower the incidence of neurosyphilis. Such being the case it is of some interest to consider if this increased immunity of parous women to the *Spironema pallidum* is helped or enhanced by pyretic treatment. An analysis of the female paretics treated in the London County hospitals reveals the fact that 28 per cent. were nulliparous, 22 per cent. had had a single pregnancy, and the remaining 50 per cent. had had two or more. The discharge rate of these women as a whole was 31 per cent., but the nulliparae only gave a 19.2 per cent. discharge rate, in contrast to a rate of 47.6 per cent. in primiparae and 30 per cent. in multiparae. That is, pregnancy bettered the discharge rate in the ratio of 1 to 2.5 in single pregnancies and in 1 to 1.6 in multiple pregnancies, or, in

round figures, pregnancy doubles the chances of a successful remission. In a similar ratio it also increased their chances of improving sufficiently to become useful workers under supervision, although the mortality percentage did not show any marked variation between the three groups.

AGE

Taking age as the next factor, one finds most observers of the opinion that, with the exception of juvenile paretics, the younger the patient the better the prognosis. In a restricted sense this is true, but when dealing with certifiable mental disease one is usually satisfied if the patient reaches a state of remission good enough to justify his discharge from hospital and sufficiently prolonged to allow of his remaining out indefinitely. In general paralysis it is even satisfactory if the patient has a cessation of seizures, a freedom from contractures, and does not become bed-ridden. If the first-mentioned state is accepted, age is not of such paramount importance, for some patients as old as 56 years remit after treatment and have been discharged, while others over 60 years of age definitely improve and become useful institutional workers. I am purposely rather over-emphasizing the probability of improvement occurring after treatment in elderly paretics to counter a policy of *laissez-faire* towards these patients, which is advocated by some authorities. On the other hand, if an approximate return to normality is demanded, then undoubtedly the younger paretic makes the better citizen. In the cases under consideration the discharged patient who was able to resume his or her occupation to the full, and who only revealed mental abnormalities following an exhaustive mental examination undertaken months or years after treatment, had an average age of 37 years, in contrast to the average age of 46 years of discharged patients who, although they could not be justifiably detained in hospital, still required a certain amount of control and guidance by relatives, and in whom deviation from mental normality was easily detectable. Expressed differently, 71 per cent. of the discharged patients who could be regarded as being economically satisfactory were under 40 years of age. This age factor, however, is of little value in assessing the chances of life of a treated paretic, for in this collection of cases the highest relative death rate was found in patients between the comparatively early ages of 36 to 40 years.

TYPE OF CASE

When reviewing the literature which deals with the relative prognosis of the various so-called types of dementia paralytica, one is confused at the lack of uniformity in the findings, and inclined to be sceptical of type as any aid to prognosis. One could easily understand such differences occurring if it were the relative incidence of the types that varied, for national characteristics and temperaments differ in the normal. The discrepancies occur, however, in the relative results of type as compared with type, inclining one to presuppose that there are certain sets of conditions which vary from community to community, thereby affecting the type result of treatment in different centres. As far as this group of cases is concerned, this supposition cannot be substantiated, for between the types there was little variation in such ascertainable conditions as the average age (excluding, of course, juvenile paretics), the age at which infection occurred or its treatment, the incubation period of the neurosyphilis, or the standard of education and the occupation of the patient. True, women were more prone to be of the manic-depressive types, but not more so than the usual tendency of women to develop a manic-depressive psychosis more frequently than the male. It is a fact, however, that different types do vary in their response to treatment. In this country the expansive grandiose paretic is still the commonest, and at the same time gives the greatest relative

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discharge rate, very closely followed by patients of the manic type. At the other extreme must be placed juvenile and depressed cases. The latter only remit well enough to be discharged with about one-third the frequency of expansive cases, while "stuporose," "simple dementing," and "tabo-paretic" types, which each give very much the same discharge percentage, only do so one-half as frequently as expansive cases. On combining the percentages of discharged and improved patients, one finds that the total is over 50 per cent. in the expansive and manic types, compared with 22 per cent. only in depressed cases. The latter type also gives the highest mortality percentage—nearly three times that of the manic, which of all types seems to have the greatest resistance to both the *Spironema pallidum* and the rigour of the treatment.

REMARKS ON TREATMENT

As is to be expected, there is a definite tendency for early treatment—that is, two to five months after the first manifestation of general paralysis—to give better results, since not only is the discharge rate higher in the earlier months, but the unimproved cases tend to increase proportionately as time elapses, such a tendency being even more marked in the mortality percentages.

It is still a subject for conjecture when dealing with a disease of which the general public is so fully aware and in which, in the large majority of cases, the primary lesion is so easily observable, how infrequently one is able to obtain any history of its occurrence or treatment. It is almost as remarkable that patients who are able to give such a history remit well enough to be discharged twice as often as the others. One doubts whether this is entirely due to the primary treatment, for there is less than a 5 per cent. difference in the results obtained from cases treated with the organic arsenicals alone, or mercury and iodides only. What I have previously termed the incubation period of neurosyphilis—the length of time elapsing from the primary infection up to the development of the first symptoms of general paralysis—averaged in this collection of cases ten to fourteen years, with extremes of two and forty-three years, and, apart from a slightly greater tendency in patients who develop the disease early—that is, from two to six years after the chancre—to remain unimproved, there was no relationship between incubation period and result. Similarly, the quantitative pathological findings in the serum and cerebro-spinal fluids show no relationship to the result. Two points are worthy of comment here. The first is the increased frequency with which one is encountering patients who have a negative serum Wassermann reaction and positive spinal fluid findings, so much so that one is almost inclined to suggest that lumbar puncture should be routine in all new cases admitted to a mental hospital. The second is the ability of both the macro- and the micro-Meinicke reactions to pick out partially treated cases of neurosyphilis when the Wassermann reaction gives a negative result.

Among the factors making for success in the treatment of general paralysis is a short course of tryparsamide before the induction of the pyrexia. This tends to lessen the activity of the cortical spirochaetosis, and allows the patient to rehabilitate his or her general condition and partially eliminate the causes of the toxic disturbances so commonly found in these cases on admission, thus better fitting them to withstand the exhaustion of the fever. The evidence of such improvement is to be found in the increased weight, diminution in the severity of the tremors, and improvement in muscular co-ordination.

Malaria is still our most successful pyretic agent, for, excepting sulfosin and allied sulphur preparations, the introduction of which is of too recent a date for a correct

assessment of their value to be made, the other agents are uncertain in their ability to produce any reaction in the organism or, having become effective, are uncontrollable in their course. From a review of this group of cases it appears that one should aim at the production of ten or more pyrexial peaks of 103° or over, while there is some evidence to support the belief that up to an optimum the longer the fever the greater the immunity response. Unfortunately, malaria *per se* has a recognizable mortality rate, but this, as is recommended by the Ministry of Health workers, Horton Mental Hospital, can be controlled to a large extent by the daily enumeration of the number of parasites and the temporary cessation of the fever with small doses of quinine whenever the count gives a higher number than 25 per field.

Again, if the malaria is followed up with novarsenobenzene or sulfarsenol, one may expect a result better by over 10 per cent. than if the treatment consists of malaria alone, while further factors in the continued remission of discharged patients are periodic clinical and serological re-examinations, accompanied by further treatment with tryparsamide whenever mental or neurological abnormalities present themselves or if the spinal fluid findings show tardiness in reverting to the normal.

SUMMARY

To recapitulate briefly: pregnancy doubles the chances of remission; patients below the age of 40 years make the most economically satisfactory remission, although this should not prevent every patient whose physical state will stand it from receiving treatment quite irrespective of age. In this country expansive and manic paretics give the best prognosis, while depressed and juvenile cases do not respond very satisfactorily to treatment. The ability to remember the primary infection and its treatment is of prognostic value, although neither the length of time elapsing before the onset of neurosyphilis nor the pathological findings are of any value in this respect. Treatment must be thorough, and should be supported by a subsidiary course of organic arsenic after the fever.

TREATMENT OF TRUE RHEUMATOID ARTHRITIS BY BLOOD TRANS- FUSION AND INSULIN*

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The treatment of true rheumatoid arthritis by orthodox methods yields, on the whole, disappointing results, even when the condition is in an early stage. In this respect it is unlike the other types of arthritis in which the results of proper treatment appear to be in direct relation to the period of the disease at which such treatment is commenced. The treatment here described has been evolved during the last three years, and is an attempt to improve the condition of these patients physiologically by increasing their blood resistance and body weight, since it is assumed that these two factors are the key to the rapid downhill course which is usually observed in these cases.

DEFINITION AND ETIOLOGY

The term "rheumatoid arthritis" is generally used too loosely. For the purposes of this paper I refer only to the condition which occurs almost exclusively among

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