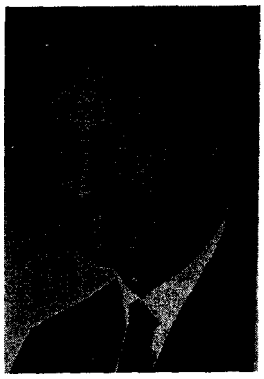
Treatment of Schizophrenia



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SCHIZOPHRENIA SYNDROME

One of the major advances in the practice of medicine occurred when physicians realized that combinations of a few symptoms and signs pointed toward a single disease or condition. This constellation of complaints and observations is called a syndrome. The syndrome may result from a small number of causes. Its recognition leads to more accurate diagnosis and treatment. Individual symptoms on the other hand may be caused by a variety of conditions.

As long as symptomatic treatment only is available it is impossible to use treatment directed against the cause of the disease. For example, fatigue is almost an ubiquitous symptom of many diseases. It is therefore impossible to order specific treatment for fatigue.

Increased hunger and thirst as symptoms are not any more helpful in determining treatment. If, however, these are associated with weight loss and with increased excretion of urine, one will suspect diabetes. This combination leads to an investigation of carbohydrate metabolism, e.g., sugar-tolerance tests, urine tests for sugar and acetone. Thus diabetes is diagnosed or excluded and specific treatment is provided.

Syndromes are also useful in psychiatric diagnosis. In the same way they do not pinpoint the cause of the syndrome but will narrow the search for causes. Generally syndromes refer to organ dysfunctions or to metabolic diseases. Psychiatric syndromes point to different forms of cerebral disturbances. I consider every psychiatric disease a manifestation of a cerebral disorder. Psychiatry, then, is that branch of medicine which deals with cerebral disorders which cause changes in perceiving, thinking, feeling, and behaving. In the same way a liver disorder may produce jaundice, fever, loss of appetite, and colored pigments in the urine, while a lung disorder may produce shortness of breath, coughing, sputum.

Schizophrenia is a syndrome of a brain disorder of a particular kind. This was recognized several hundred years ago, especially and most clearly by Conolly (1830) who defined insanity as a disorder of perception combined with an inability to judge whether the misperceptions are real or not. This leads to bizarre or strange behavior. Conolly recognized the three main aspects of brain function, perception, thinking, and behavior.

The brain is an organ which perceives,

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thinks (including memory), feels, and orders behavior. When its metabolism is disordered, this is expressed by changes in perception of one or more of the senses (illusions and hallucinations) in thinking, in mood, and in behavior. The basic changes which produce the schizophrenic syndrome are changes in perception and in thought. Arising from these primary changes (in a sequential sense) are the secondary changes in mood and behavior.

There are other syndromes which are not schizophrenic. If the main changes are in mood with no changes in perception and thinking, the diagnosis is depression for which there may be several reasons. If the schizophrenic syndrome is accompanied by signs of mental confusion such as disorientation and severe memory loss, the syndrome is said to be an organic confusional state.

As medical diagnosis is clinically never as sharp and precise as one would like, it may be difficult to distinguish between these syndromes if the symptoms and signs are vague as they sometimes are.

Diagnosing this syndrome is usually fairly easy provided the clinician is aware of the importance of perceptual changes and is not afraid to diagnose schizophrenia. Why should any psychiatrist fear schizophrenia? Because for most psychiatrists it carries a very pessimistic prognosis since with standard treatment (tranquilizers) very few patients recover. Very often a recovery immediately throws into doubt the diagnosis of schizophrenia for these clinicians. The diagnosis depends upon a very careful mental examination for the presence of illusions, hallucinations, and thought disorder (content or process or both). This may be done by the usual discussion interview between patient and doctor, or by the use of rapid perceptual tests such as the HOD test (Kelm, Hoffer, and Osmond, 1967), EWI (El-Meligi and Osmond, 1970), and the Green test (1970) for subclinical pellagra. These tests are the best available for detecting the cerebral functions disordered by metabolic faults. A physician with these tests is a better diagnostician than a psychiatrist who does not use them. However, all they do is confirm the diagnosis of the schizophrenic syndrome. They do not tell us the nature of the disorder. For this a different type of test, usually biochemical, is required.

Over the past 80 years various kinds of cerebral disturbances have been described. About 1910 the main diagnostic problem in mental hospitals was to distinguish between general paresis of the insane (CPI), pellagra, scurvy, and dementia praecox (schizophrenia). When the causes of GPI, scurvy, and pellagra were discovered and treatment developed, these three schizophrenic syndromes disappeared from psychiatry. They fell into the domain of neurologists and nutritionists (M.D.'s). Unfortunately for psychiatry, each schizophrenic syndrome for which a cause is discovered is taken away as rational treatment develops. It seems as if only syndromes of unknown origin and useless treatment remain within the grasp of psychiatrists. Perhaps this is why there has been a general attitude of doom and gloom in psychiatry for the past 100 years, interrupted briefly by flashes of optimism when newer treatments developed. The tranquilizer era was characterized by a hypomanic euphoria, as was the advent of psychoanalysis into North America over 20 years ago. The tranquilizer euphoria is slowly settling down into the usual pessimism of psychiatrists when they are forced to recognize the schizophrenic syndrome.

Another schizophrenic syndrome taken from us is phenylpyruvic oligophrenia (PKU). This was first identified among a group of chronic schizophrenic patients by a characteristic urinary change. It is today treated by pediatricians, and only their failures eventually come under the care of psychiatrists, especially those specializing in retardation. Down's syndrome was excluded from the syndrome because of its appearance in infancy and because of the characteristic facial changes, not because of clear-cut differences in the mental state. They may

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have the characteristic schizophrenic syndrome.

Schizophrenic syndromes may also be produced by a variety of chemicals such as atropine (belladona), the amphetamines, other stimulant drugs, and the hallucinogens. These syndromes still are treated by psychiatrists, but there is a trend away from psychiatry as general practitioners become more knowledgeable about these syndromes. Thus at City Hospital, Emergency Department, Saskatoon, patients whose schizophrenic syndrome results from LSD intoxication are often treated by the interns on duty by the intravenous injection of 100 mg or more of nicotinic acid, and there is no need to request a psychiatric consultation.

However, the majority of schizophrenic patients are considered to be ill because of a functional disturbance with no known cause. The term functional originally applied to the psychosocial environment, but more recently there is a growing awareness of the fact that psychosocial factors shape and are caused by the illness and are not its cause.

I have divided these syndromes of "unknown" cause into three major groups: 1. the vitamin dependencies, 2. the cerebral allergies, and 3. those of unknown origin. I suspect that group three is a rather small group. I will therefore discuss the treatment of the dependencies and the allergies. This discussion will be rather general and brief since the details of megavitamin, mineral, nutritional, and allergy therapy will be discussed in other presentations.

TREATMENT

The Vitamin Dependencies

Vitamins are organic molecules which form components of enzymes. These catalyze the reactions in the body by which food is broken down into its basic units and which are used to construct those molecules required for structural purposes and for the production of energy. Nearly every chemical reaction requires a catalyst. They are required in rather small quantities since the same molecule can be used over and over. The majority, of people probably have, requirements for every vitamin which can be expressed by the usual bell-shaped curve so common for all biological phenomena, i.e., 95 percent of the population will have optimum vitamin requirements which fall within two standard deviations of the mean. About $2^1/2$ percent will require more. But each vitamin will have its own distribution frequency. An individual may require more of one vitamin and have normal requirements of the others.

The reasons why individuals require much more than the average is not known, but it is likely there are a number of factors lying between the vitamins in the food and their delivery to the cells of the body. If a person with average requirements for any vitamin lives on a diet which contains less than his requirement, he will in time develop a deficiency state which may produce a characteristic syndrome such as scurvy, beri beri, or pellagra, or a generalized state of ill health with no characteristic syndrome, such as a vitamin E deficiency. The error is in the diet and not in the person. The deficiency states are the ones recognized by nutritionists.

If a person has an above-average requirement for a vitamin and consumes a diet which provides only average amounts, he will also develop a deficiency state which is just as real as the other deficiency. There is a relative deficiency. It has been called a dependency. The problem is in the person and not in the diet. Over a dozen dependencies have been described for Pyridoxine and for vitamin B12 It is likely that for each vitamin some patients will be found who have a dependency for that vitamin. There is an enormous range of variation ranging from 10 mg of vitamin B3 for many people to 3,000 mg per day for a few. Anyone who has followed the work of Roger Williams (1971), L. Pauling (1968), F. Klenner

(1973), and others cannot doubt that there is a very wide range of need for vitamins.

The reasons for the range in need are unknown, but there is some evidence that at least for vitamin B3 a prolonged deficiency can lead to permanent dependency. In the mid-thirties it became known that for dogs maintained on pellagra-producing diet, for a long time thereafter megadoses of vitamin B3 were required to keep them free of pellagra. The early pellagrologists were amazed to find that some adult pellagrins required maintenance doses of 600 mg of vitamin B3 to keep them free of pellagra, a dose 60 times as high as that considered necessary by many nutritionists to prevent pellagra. A third line of evidence comes from prisoners-of-war. Maintained on starvation diets for 44 months, Canadian soldiers kept in Japanese prison camps in Hong Kong suffered from a variety of avitaminoses. These soldiers have remained physically and mentally ill since then (Richardson, 1964). The exceptions are a group of a dozen veterans, all as ill as the rest, who have been taking nicotinic acid, 3 grams per day, and have been well since. One patient, G.P., has been on this dose since 1960 and has been well the whole time with the exception of a two-week period in 1962 when he went on a holiday and forgot to take his nicotinic acid with him.

Patients who are vitamin dependent may have difficulty absorbing vitamins. Several schizophrenics who did not respond well to large oral doses of nicotinic acid have shown much better responses to the parenteral administrations of much lower quantities. I have suggested that schizophrenia is a vitamin B3 dependency (Hoffer and Osmond, 1966). A more accurate statement is that a proportion of schizophrenics are vitamin B3 dependent, that is vitamin B3 dependency is a cause of the schizophrenic syndrome. I believe that the majority of schizophrenics fall into this category, but an accurate estimate is not possible. However, it is clear that a substantial number of schizophrenics are vitamin B6 dependent, i.e., vitamin B6 dependency is a cause of some schizophrenic syndromes. Vitamin B3 and B6 dependency ought to be very similar clinically since both are involved in the production of nicotinamide adenine dinucleotide (NAD), the active enzyme made from vitamin B3. Vitamin B3 is a precursor, and vitamin B6 is required for the transformation of tryptophan into NAD. The absence of Pyridoxine produces pellagra, as does the deficiency of vitamin B3. A few patients may be both vitamin B3 and vitamin B6 dependent.

Treatment of course will be different. This illustrates once more that identity in the clinical syndrome does not accurately determine treatment.

Vitamin B12-dependent states have been described where 1,000 times the usual daily requirement is needed. Newbold (1972) found several schizophrenics who were low in vitamin B12 b and responded well to injections of vitamin B12b. Kotkas (1972) has been using large quantities of both folic acid and vitamin B12 for his patients.

(1) **The vitamin B3 dependencies.** These produce the schizophrenic syndrome and allied conditions. Treatment therefore must depend upon megadoses of either nicotinic acid or nicotinamide, but other vitamin supplements may be required.

Because of the variability of the syndrome it is impossible to prescribe the same treatment for every patient. To the normal variability between individuals one must add the effect of the disease, its duration, previous treatment, and so on. Therefore it seems more efficient to start with a general program of treatment shown by past experience to be most helpful to the largest number of patients. Patients who respond will require minor changes in therapy as they improve, while more complicated programs will be required for the treatment failures.

I therefore divide my patients into phases for which there is a particular treatment. Phase One treatment is given Phase One patients. Phase Two patients

are Phase One treatment failures or failures from other programs. They require more vigorous treatment, usually in hospital. Phase One treatment given Phase Two patients is generally futile. Unfortunately all the so-called "controlled" studies by nonorthomolecular physicians have made no attempt to match treatment and patients. They should not have been surprised they did not find the same therapeutic response as do Orthomolecular physicians. They have ignored this serious criticism of their work and have erroneously claimed vitamin B3 was ineffective for the treatment of schizophrenia. The worst offenders have been Dr. Ban and his colleagues who were asked by the Canadian Mental Health Association to disprove the claims that vitamin B3 therapy was efficacious for some schizophrenic syndromes.

Phase One

Phase One patients are acute schizophrenics ill one year or less or are subacute, i.e., have suffered one or more relapses from which they have recovered or have greatly improved. They are able to cooperate or have families who can insure their cooperation. They seldom need to be in hospital. Sometimes chronic mild schizophrenics highly motivated to get well will respond to Phase One treatment. The acute patients are generally the ones most likely to recover spontaneously. The natural remission rate is believed to be about 35 percent. I am increasingly doubtful this is correct, because I have seen a number of such patients said to have recovered from a schizophrenic illness. They consulted me up to 20 years later. During this period, when considered by hospital records to be normal, they suffered from periodic episodes of depression, tension, paranoid ideas and illusions, and so on. But they did not re-experience hallucinations, and their behavior remained within socially acceptable limits. They had not been well, they did not consider they were well nor did their families. Yet in the follow-up statistics they were recorded as recovered.

1. Supernutrition - This is basic. The no-junk diet will generally provide this. Junk food is any food adulterated with sucrose, starch, or white flour. The standard diet for relative hypoglycemia is good, but patients who are allergic to dairy products or meat should be cautioned either to avoid these foods or not to increase their consumption. One of my patients became much worse on this diet, because he greatly increased his consumption of beef to which he was found to be allergic. Any food which the patient likes excessively or loathes should be suspect.

2. Vitamin B3 - Nicotinic acid and nicotinamide, both forms of vitamin B3, are precursors of NAD. The dose range of nicotinamide is 3-6 gm per day. Higher doses may cause nausea and vomiting. The dose range for nicotinic acid is usually 3 gm per day and up. Generally patients can go much higher before developing nausea. The correct dose is that dose which will yield improvement and will not produce unpleasant or dangerous side effects. Dr. Ross (this meeting) describes the details of the use of vitamin B3.

3. Other vitamins - Patients may require ascorbic acid to decrease the frequency of colds and infections, or any of the other vitamins such as Pyridoxine, thiamine, pantothenic acid, folic acid, vitamin B12, vitamin E, and vitamins A and D. For each nutrient the optimum dose must be used. There are as yet few firm indications for these vitamins. The few indications which suggest the specific vitamin are: thiamine: depression. riboflavin: visual problems, lesions at the corner of the mouth. Pyridoxine: pyroluria (malvaria), allergy, hyperactive behavior, convulsions, malabsorption (a flat curve on five-hour glucose-tolerance curve, Silverman, 1974). vitamin E: cardiovascular and peripheral vascular problems, aging, pantothenic acid: general fatigue, allergies, vitamins A and D: allergies.

4. Tranquilizers, antidepressants, and other standard drugs are used as indicated in optimum doses. The dose is decreased as the patients begin to recover. Generally lower dosages are required so that fewer troublesome side effects and toxicities are encountered.

5. Duration of treatment. Phase One treatment is continued as long as patients continue to improve. Patients should be started on Phase Two therapy if they have reached an unsatisfactory plateau of improvement or if they have not improved. How long one will wait depends upon clinical judgement but it may range from one to 12 months.

Phase Two

Phase Two patients have not responded to Phase One treatment, or have been continually ill for more than one year. They are also patients too sick to cooperate with treatment at home because they are suicidal, homicidal, or engage in behavior impossible to cope with by their family or community. They usually must be treated in hospital. The main difference between Phases Two and One is that they are now given a series of electroconvulsive treatment (ECT) which may be unilateral for less severely ill or bilateral for chronic patients or a mixture of both. The series varies from about five to 15. The number is determined by the clinical response. The chemotherapy started in Phase One is continued, but generally larger doses of vitamins are given and parenteral administrations are used more frequently.

After the series of ECT is completed, the patient is kept in hospital until memory has been restored to a level compatible with living in the community; usually about five to nine days are required. On megadoses of vitamins there is much less confusion and memory loss. Patients may now continue to improve until they are well.

Phase Three

These are patients who have failed to respond to Phase Two treatment. It also includes patients who have been sick for many years. The prognosis of this group varies. It is best for chronic patients who have not been kept in mental hospitals for many years and is poorest for those who have.

These patients will require a good deal of support whether or not they recover for it is not easy to regain one's way in life after many years of illness. The prolonged illness and treatment creates problems, attitudes, and habits that are difficult to eradicate even if the schizophrenic syndrome should be immediately removed.

Phase Three patients may be given the following treatments:

(a) penicillamine usually combined with another series of ECT. The dose is 1/2 to 1 gm per day for up to 30 days.

(b) several series of ECT at intervals of one-half to two years. Each series raises the patient to a higher plateau of recovery.

(c) any new treatment which has been helpful for some patients provided that it will not harm the patient.

It has become clear over the past two years that a major proportion of the Phase Three patients are schizophrenic syndromes caused by cerebral allergies. This is why they have not responded to any chemotherapy. Megadoses of some vitamins have anti-allergy properties, but it is obvious that patients who are continually exposed to an offending food or other allergen cannot become well until the allergenic food or chemical is removed from them. A quick summary of the three phases is shown in Table 1.

(2) **The vitamin B6 dependencies.**

Irvine (1961) and Hoffer and Mahon (1961) reported that a substance which stained mauve in color on the paper chromatogram occurred more frequently in psychiatric patients, especially schizophrenics, than in any control population. Hoffer and Osmond (1963) compared subjects who excreted this mauve factor against controls using clinical description, the HOD test, response to treatment, and concluded that the mauve-factor excretors resembled

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TABLE 1

Summary of Treatment Phases

	Patients	Treatment	Duration	Results
Phase One	Sick less than one year, cooperative	Supernutrition Megavitamins Minerals Drugs	Up to 2 years	About 75% recovery
Phase Two	Sick longer than one year, unable to cooperate	As above plus ECT	Up to 3 years	About 50% out of Phase Two
Phase Three	Chronic	As described	Up to 5	About 50% out of Phase Three

schizophrenics more than any other diagnostic syndrome. Malvaria was suggested as the name for this new schizophrenic syndrome.

Recently Irvine, Bayne, and Miyashita (1969) identified mauve factor as kryptopyrrole (KP). It is a very toxic pyrrole. Pfeiffer (1972) and his colleagues have shown that KP binds Pyridoxine and when present in excess must produce an increased need for Pyridoxine, i.e., a Pyridoxine dependency. Patients with too much KP or over 20 ug per 100 ml must therefore be given megadoses of Pyridoxine or up to several grams per day. Pfeiffer recommends that extra quantities of zinc and manganese ions should be given along with Pyridoxine. For these vitamin B6-dependent schizophrenic syndromes vitamin B6 must be considered the primary vitamin.

As I have stated earlier, both vitamin B6, and vitamin B3 are related to NAD. It is therefore not surprising that vitamin B3 will also be therapeutic for the pyridoxine-dependent syndromes. However, there will be patients who recover on vitamin B6, alone. Pfeiffer has suggested that KP-positive patients be called pyrolurias. This is a sensible recommendation and should replace malvaria as a diagnostic term. Fortunately his description of the treatment of this condition is presented in this volume.

Schizophrenic Syndromes Resulting From Cerebral Allergies

Randolph (1961, 1966, 1970) used the technique developed by Rinkel (1944) for diagnosing cerebral allergies on the basis of personal experience with 500 patients. Randolph concluded: (1) any food can produce a cerebral reaction, (2) multiple-food susceptibility is the rule, (3) usually foods consumed every three days are involved, (4) other chemicals in the environment, such as insecticides, hydrocarbons, sprays, perfumes, and so on, can produce similar reactions, (5) these cerebral reactions are often labeled neurotic or emotional. Randolph called these psychiatric reactions ecologic mental diseases. This work has been propelled into psychiatry by Rees (1973), Newbold et al. (1973).

Fortunately Dr. Philpott, Dr. Green, and Dr. Glaisher will describe in detail the vast importance of the cerebral allergies in the production of psychiatric diseases.

Randolph has outlined a clear relationship between the effect of foods to which a subject is allergic (allergo-genic) and the intensity of the response. Randolph suggests that we have not only an allergic reaction, but an addiction. The reaction which comes on when the offending food is not available is the withdrawal or hangover effect. His scheme is shown below.

Relation Between Effect of Allergogenic Food and Depth of Hangover

Pick Up Intensity

1. Active, buoyant, alert, stimulated.
2. Hyperactive, keyed up, energetic, irritable.
3. Jittery, argumentative, aggressive, drunk-like.
4. Uncontrollably excited, agitated, maniacal.

Intensity levels 2 and 3 describe the hyperactive syndrome in children, and level 4 well describes mania whether it is a manic-depressive or schizophrenic mania. Levels C and D are rarely recognized as cerebral allergies. Patients' clinical condition will vary from intensity level 1 to 4 and from A to D in the hangover level. Randolph concluded, "any mental or behavioral aberration in which causation has not been demonstrated deserves to be investigated from the ecologic standpoint." Crook (1970) listed the following symptoms which were present in patients with allergies, unreality, depression, bizarre and irrational behavior, nervous tics, and inability to concentrate. Crook concluded "The net result of this hyper group of symptoms is to make the unfortunate youngsters who manifest them definitely unpleasant little people to have around. They are apt to be reprimanded and punished by parents and teachers and rejected or ignored by their siblings and contemporaries."

The schizophrenic syndrome caused by cerebral allergy is not unique clinically. There is no way of distinguishing cerebral allergy by an examination of the mental state. From the 40 or so cases I have diagnosed there seems to be two clinical differences:

1. The cerebral allergies have a fluctuating course, their history is characterized by a series of recoveries or improvement followed by severe relapses in a few weeks or months. The chronic schizophrenics who did not respond to a four-day fast or to elimination diets were unremitting schizophrenics who had never experienced any significant Hangover

A. Sniffly, itchy, queasy, absent minded, tired.

B. Wheezy, rash, cramps, brain fogged, aches, puffy.

C. Confused, indecisive, morose, lethargic.

D. Depressed, stuporous, disoriented, amnesic.

recovery. On Phase Three therapy they improve slowly and may require many years of treatment.

2. The cerebral allergic patients generally have more insight, are more cooperative to treatment while the other schizophrenics more often show the typical lack of insight or schizophrenic thought disorder which can be so puzzling to everyone.

The cerebral allergies are diagnosed by several tests:

1. The usual epidermal challenge tests which may be surface penetration, or intradermal, are generally unreliable for foods but are very accurate for nonfood allergins such as pollens, dusts, fumes, etc.

2. Serological tests have been used by Ulett and Itil (1973).

3. A period of fasting from four to seven days. This may or may not be accompanied by treatment with laxatives and enemas to increase the elimination of food from the intestines. This is followed by introduction of single foods. If the patient is allergic he will respond by quickly developing his basic symptomatology, by an elevation of pulse rate, or by severe physical symptoms. Thus several patients who had become free from nearly continuous hallucinations by a fast suffered a resurgence of hallucinations within an hour of eating the allergogenic food, usually milk. One patient also developed violent abdominal cramps and severe diarrhea, another developed a skin rash.

A few patients were very much improved following a four-day fast even though they did not develop any reaction to any food thereafter. It seems as if the four-day fast may have some therapeutic

value independent of allergies.

4. Elimination diets.
5. Rotation diets.
6. Provocative tests. These are described by Philpott, Green, and Glaisher at this meeting.

Treatment of cerebral allergies must include the elimination of the allergo-genic foods and chemicals for many months or years. They may then be introduced in small quantities on a rotation basis but may never be compatible with the person. (I am now investigating the desensitization procedure developed by Dr. I. Glaisher which may allow the use of small quantities of foods to which the patient is allergic.)

Rees (1974) suggested that rigid rotation diets may be harmful for some people if the offending food is used since each consumption of that food reinforces the allergic reaction. She suggested instead that the offending food not be used at all and that the rest of the diet should depend upon as wide a variety of foods as possible consumed in small quantities and in a random fashion.

Some of the vitamins in megadoses appear to have anti-allergy properties. So many are involved it appears as if any nutritional imbalance can sensitize people toward allergies. Two commonly used chemicals, alcohol and sucrose (table sugar), seem to have remarkable properties for inducing or aggravating allergies. Many patients who go onto a sugar-free diet promptly lose their allergies to a variety of foods. Ulett and Ifil (1973) have suggested that alcohol acts as a carrier for cereal grain-derived proteins and so increases the likelihood of producing allergies. The common alcoholic beverages are therefore very efficient in producing allergies (addictions).

The vitamins which appear to have anti-allergic properties include: (1) Nicotinic acid which releases histamine and heparin from most cells and decreases the concentration of these substances in the body. Since allergic-shock reactions depend upon massive release of histamine, a subject on nicotinic acid will suffer much less. There is less histamine stored and able to be released. (2) Ascorbic acid will combine with histamine and detoxify it. Large doses must be used. (3) Vitamins A and D as used by Reich (1971). (4) Calcium pantothenate appears to reduce intensity of allergic reactions. (5) Pangamic acid has anti-asthma properties according to Cott (1974). Pyridoxine also has anti-allergy properties, perhaps because it improves malabsorption.

However, it is illogical to expect these substances to cure allergies. They are very helpful in controlling minor allergic reactions provided that the major offenders are removed from our internal environment.

RESULTS OF TREATMENT

Over the years I have accumulated a number of megavitamin failures patients who have not responded permanently to any treatment ever given them. Over the past four months I have treated about 60 of these failures with the four-day fast. Over 40 were normal by the fifth morning. When the offending food was given them they promptly relapsed. They are now well as long as they keep away from the offending food. Most of them no longer require any medication, including vitamins. Out of the responsive group, 75 percent were allergic to dairy products. Two were allergic to both beef and milk products. These two were chronic relapsing schizophrenics, both ill over 20 years and with at least 20 admissions to mental hospitals or psychiatric wards. One was allergic to smoking. I found very few cereal grain allergies, in contrast to Philpott whose population of patients included many cereal grain allergies. Perhaps this is due to different feeding habits of these different areas.

In addition I have placed a large number of patients on dairy-free diets, and many of them have been promptly freed of depression, tension, fatigue, and so on.

A couple of case histories will illustrate these recoveries. Mrs. G.C., age 21, was

admitted to hospital June, 1971, as an emergency. She complained that her body seemed strange. As a child she was shy and passive and described herself as neurotic. After puberty she forced herself to be more outgoing, but was irritable and easily upset. In 1969 she began to use hallucinogenic drugs each week, but after one year took no more. She then began to feel strange and became very depressed. Her first child was born $3^1/2$ months before I saw her. During her pregnancy she felt normal. Mental state showed visual illusions, voices, and she heard her own and her husband's thoughts. She was very paranoid and believed her husband was poisoning her food. She complained of ideas of killing her baby and husband. She was very depressed, nervous, and tired. I diagnosed her as an acute schizophrenic and gave her Phase Two treatment.

After six ECT and megavitamin therapy she improved. She improved substantially. From then on she was on the whole megavitamin approach with vitamin B3, ascorbic acid, thiamine, and Pyridoxine. She also took antidepressants, tranquilizers, and lithium as required. But at no time did she recover and stay well more than a few weeks. She required nine ECT June, 1972. She began to improve and by June, 1973, was nearly normal. The summer of 1973 she remained well, but in the fall her depression began to return. By February, 1974, she was withdrawing more and more. She had developed unpleasant nausea from her nicotinic acid and November, 1973, was started on 1 gram per day of a slow-release preparation.

On March 1, 1974, I found her extremely depressed, suicidal, and ideas she would have to kill her baby. I promptly admitted her to hospital. The next day she started a four-day fast. On the evening of the fourth day she was normal. The fifth morning she had a severe relapse half an hour after one glass of milk. Later she was found allergic to peanuts. Since then she has been well and requires no medication. I have advised her her schizophrenic syndrome was caused by a cerebral allergy.

A second patient, age 19, under treatment four years, was on the entire Orthomolecular program including several series of ECT. Her perceptual symptoms and thought disorder cleared, but she remained tense and depressed. May 13 she started a four-day fast and four days later was normal. Milk produced a rapid relapse. She is now normal on a dairy-free program.

My last example illustrates an aspirin allergy. The patient, age 54, had recently been discharged from a hospital in Eastern Canada. This was her third admission in three years. She fled from her husband because of her paranoid ideas about him to live with her sister in Saskatoon. A few days later I saw her. She complained of voices which told her her husband was unfaithful, which made fun of her. She was convinced her husband was plotting to get rid of her and had hired someone to follow her and was depressed.

At the end of a four-day fast she was normal. On returning to food there was no relapse, but on the second evening she had a mild headache and took two aspirins. Within the hour she had relapsed. Her hallucinations returned within 15 minutes. Then it turned out she had been using aspirins for four years to control pain in her hip. One week after I saw her she returned to her husband well. She required no medication and has remained normal.

DISCUSSION

The discovery of the schizophrenic syndrome due to cerebral allergy clarifies an important issue not only in treatment but for research. A substantial proportion of my megavitamin failures were cerebral allergic. They were also the kind of patient who used to comprise a large proportion of chronic patients in mental hospitals and still do make up a large proportion of the chronic nonresponders. These patients had also failed to respond

to standard tranquilizer and antidepressant chemotherapy. These are the patients most accessible for research, and they have been used heavily for nearly all biochemical studies. Since this is a mixed population composed of schizophrenic syndromes due to a variety of causes, it is no wonder it has been so difficult to find significant differences between them and control groups. Our malvaria studies showed clearly that the highest proportion of malvarians occurred in the acute and subacute populations, while chronic patients seldom had kryptopyrrole in their urine. One can therefore no longer reason from these studies of the past unless the groups have been clearly described and separated. The same applies to clinical studies. Treatments which work well for acute and subacute cases, which are mainly the vitamin-dependency group, will not do as well for chronic groups with a heavy loading of cerebral allergies. They will require different treatment.

CONCLUSION

Orthomolecular psychiatry uses a broad-spectrum approach to treatment which gives proper consideration to supernutrition, to vitamins up to megadoses, to optimum mineral metabolism, and to the cerebral allergies. This rational approach is aided when necessary by temporary use of tranquilizers, antidepressants, anti-anxiety, and other chemotherapeutic substances used by standard psychiatric practitioners.

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