which they were suffering from symptoms, we were able to obtain, as the difference, the periods of time during which some help from the community, including the family doctor, had been desirable. Many of these patients had, in fact, been supported by agencies of the community or had finally been referred back for psychiatric treatment, as discussed in an earlier section of this paper. Here we are concerned only with showing the number of months during which patients had been in need of some form of community action, because on the one hand they had been unwell, but, on the other, had not been receiving psychiatric help. As we are dealing here with the main subject of this communication our complete data are presented in Table IV.

Subjects have been tabulated by (1) original diagnosis and (2) clinical status during the follow-up period independently of diagnosis, against the number of months during which they were suffering from psychiatric symptoms, but not under specialist care, and thus presumably in need of community action. For the sake of completeness we have included those ex-patients who had remained mentally well and had needed no help. Taking a superficial view, there were 82 people in whose cases community agencies would not have contributed towards better care, because they had remained well throughout the two years under review, or because they had been receiving treatment promptly on recurrence of symptoms or had been safely in hospital for long periods. But we have been unable to assess what proportion of these long-term hospital patients did in fact have unsatisfied needs of community care, in that they should have been transferred from mental hospitals to residential accommodation or domiciliary care provided by voluntary organizations or local authorities.

Forty-one patients, exactly one-third of all cases, without any doubt went through periods during which action by the community might either have been therapeutic or should have brought people back into psychiatric treatment at an earlier date; in 15, community needs had been present throughout the whole of the two years under review, and in 26 during shorter periods. We may also see from Table IV that the needs of the patients with recurrent attacks and intervening periods of reasonably good mental health were minimal, but that 20 of the 48 continuously disabled patients may not have been under any form of psychiatric treatment or supervision for lengthy periods while they and their families were clearly in need of help. The majority of old people with mild symptoms were in the same position for many months, which is an even more important finding, because these mild disorders should respond to community care so much better than severe illnesses or dementias.

Looking at openings for community action in terms of the various diagnostic categories, we found that the needs of the organic psychotics were greatest; next came people with affective disorders on a neurotic background. But even the needs of patients with psychotic affective illnesses arising more often in stabler personalities were by no means negligible in our age group (11 of the 44 not continuously well). We know from clinical experience that paranoid old people often respond, at any rate for a time, to simple common-sense measures without psychiatric advice.

Summary and Conclusions

Our findings demonstrate that, in the fields of prevention and early treatment as well as that of after-

care, the scope for community action in the case of elderly psychiatric patients is frighteningly large. In our experience with one year's discharges from a unit for recoverable cases over the age of 60, only 15% of patients remained completely well over the next two years, and 71% received further psychiatric treatment. Of the 104 patients with recurrent or continuous symptoms, at least 41 (39%) had been in need of community action coming from the family doctor, voluntary organizations, or services run by the local authority. We also recorded our impressions of the community care which was in fact given to this sample of patients, but obviously failures had come to our attention more often than successes.

Both general impressions and our statistics point to the same conclusion: any worth-while community service for elderly people with psychological illnesses or difficulties will have to cater for very large numbers, and will turn out to be very expensive in terms of manpower and money. At the same time, beyond vague impressions, very little is known about the therapeutic effectiveness of community care in this group of psychiatric conditions, and we venture to suggest that any future community programmes for elderly people be introduced step by step and in accordance with plans which will allow of scientifically conducted and controlled assessments of the value of community care of elderly psychiatric patients.

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LONG-TERM ANTICOAGULANT TREATMENT OF CORONARY THROMBOSIS IN GENERAL PRACTICE

BY

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Anticoagulant therapy in the early stages of coronary thrombosis is now generally acknowledged to be beneficial and is widely practised. Long-term treatment with anticoagulants is much less extensively used, though Tulloch and Wright (1954) started giving it in 1940, and up to 1952 had treated 227 patients for periods of up to eight years.

Short-term anticoagulant therapy is the use of anticoagulants during the first three to four weeks of the illness. Long-term therapy is treatment carried on for longer than four weeks, either immediately after the onset of the illness or at any subsequent time.

The literature is liberally studded with articles on long-term anticoagulant treatment in hospital out-patient departments and in consultant private practice (Foley and Wright, 1949; Hines and Barker, 1949; Cosgriff, 1950; Bay *et al.*, 1954; Borg, 1956; Breddin, 1957; Estes, 1957; to name but a few). In sharp contrast I have been able to find only one article (Putnam, 1957) which describes the experience of a general practitioner

in this form of therapy, and that was in the U.S.A. General practitioners therefore do not use long-term anticoagulants, or are remarkably reticent about their results.

The experience of a general practitioner in giving long-term anticoagulant therapy in an urban and rural practice might therefore be of interest and give encouragement to other general practitioners similarly placed.

At the time of writing 12 patients (10 males, 2 females) have been under treatment; one for 32 months, one for 18 months, four for 12 months, one for 8 months, one for 7 months, one for 5 months, two for 4 months, and one for 3 months. The accompanying Table gives the weekly prothrombin values. The number

Weekly Prothrombin Values (%) in 12 Patients under Treatment During the Past Year

Week	1	2	3	4	5	6	7	8	9	10	11	12
1	30	30	17		30	50		21	14			
2	13	27	13		30	27		33	30			
3	17	36	13		19	30		—	19			
4	18	33	18		45	30		—	18			
5	13	27	15		50	50		40	17			
6	12	27	22		36	45		19	22			
7	27	27	20		45	40		19	21			
8	18	18	19		21	25		†	14			
9	18	27	36		15	36		†	19			
10	17	25	14		19	45		†	16			
11	17	40	90		22	45		†	16			
12	17	30	21		20	25		20	18			
13	19	27	30		30	18	30	18	17	33		
14	19	23	40		23	17	20	14	14	25		
15	21	30	22		33	23	50	18	21	30		
16	17	30	19		30	21	18	19	—	33		
17	21	33	70		30	27	19	21	20	33		
18	23	22	30		22	21	16	30	17	36		
19	30	30	40		20	23	25	25	33	20		
20	36	23	45		23	36	23	55	50	25		
21	30	40	27		13	33	40	33	25	33		
22	30	30	40		23	45	28	33	25	28		
23	30	36	30		17	22	26	—	13	34		
24	45	50	36		20	23	27	33	55	45		
25	33	21	40		30	30	25	33	27	50		
26	55	33	45		21	30	20	45	36	40		
27	50	*27	20		30	30	27	—	27	55		
28	45	100	27		17	27	21	27	45	40		
29	22	100	<10		19	—	25	50	27	†		
30	16	100	90	40	18	33	17	55	22			
31	21	†	50	30	30	45	50	45	33			
32	45		55	21	50	36	33	33	36			
33	25		18	23	55	40	45	21	45			
34	22		21	15	22	27	33	27	23			
35	23		23	55	19	21	23	40	23	70		
36	22		17	21	27	30	33	30	33	45		
37	23		19	21	30	27	45	—	30	40		
38	16		21	22	18	22	20	19	18	30		
39	19		25	27	40	21	*19	—	17	36		
40	27		17	25	19	33	23	50	30	70		
41	—		22	18	—	55	25	25	20	—		
42	27		23	18	—	27	20	16	20	38		
43	20		20	25	20	23	45	22	22	27		
44	33		36	30	36	55	23	—	—	36		
45	55		21	55	30	33	23	27	22	50		
46	18		20	18	20	20	55	—	22	17		
47	50		21	25	25	36	—	18	19	36		
48	45		18	21	22	23	†	18	20	40		
49	30		19	23	19	40	—	—	19	30		
50	36		19	25	40	27	—	19	25	45		
51	21		22	18	17	27	—	23	21	19		
52	30		30	25	30	27	—	45	20	21		

* Dosage reduced with a view to stopping treatment.

† Treatment stopped on account of duodenal ulcer.

‡ In hospital with mild cardiac failure.

concerned is too small for the results to have any statistical value. Most of the men were in their forties or early fifties, and had been admitted to hospital as soon as the coronary infarction had been diagnosed clinically and confirmed by E.C.G. There they were all treated with anticoagulants, and this therapy was continued when they returned home.

The usual procedure is as follows. When notification is received that the patient has returned home, the type and dose of the anticoagulant is ascertained from the physician in charge of the case at hospital, the patient is visited, and the appropriate drug prescribed. Next day, before the morning surgery, the patient is visited

again and a sample of blood taken for prothrombin estimation. This is then dispatched by bus to the laboratory so that the test can be carried out before the blood is more than a few hours old. The laboratory telephones the result in the afternoon. If this is satisfactory the test is not repeated for a week; if unsatisfactory, an appropriate adjustment is made in the dosage (the patient's relatives are instructed to communicate with the surgery, by either telephone or messenger, at about 6 p.m.) and the prothrombin test is repeated in two or three days until a fairly steady level (about 20%) is achieved. It is then done only once weekly unless wide fluctuations occur. If stability is not reached reasonably soon a different drug is tried. After four to five weeks the patient is usually well enough to attend the surgery once weekly to have his blood taken, but sometimes he may require to be visited weekly for 8 to 12 weeks.

Indications and Contraindications

At most centres long-term anticoagulant treatment is reserved for the more seriously ill cases. Estes (1957) recommends it only when (1) there is recurrence of infarction with short free intervals, (2) there are recurrent thrombo-embolic complications following coronary infarction, and (3) there is cardiac failure or certain types of arrhythmia. Breddin (1957) reserves it for all cases of second and subsequent infarctions, diabetics, those with marked lipaemia, those with severe angina, and all women on account of the high mortality in females. Tanzi and Van Ness (1947) give it only to poor-risk patients who have any one or a combination of the following: previous myocardial infarction, intractable pain, extreme or persistent shock, much-enlarged heart, gallop rhythm, congestive heart failure, auricular flutter or fibrillation, ventricular tachycardia or intraventricular block, diabetic acidosis, obesity, previous pulmonary embolism, varicose veins, or past or present thrombophlebitis. Borg (1956) recommends it in impending cardiac infarction. Toohey (1958) excludes those who have only a moderately severe attack or a first attack.

In the present series I have accepted rather different indications. Though three of the cases had at least two infarcts before long-term treatment was started, the aim was to keep even the first-timers from getting a further attack and so enable comparatively young and otherwise fit men to continue to carry their business and family responsibilities. In other words, the indications were as much economic as medical.

Selected patients must be intelligent enough to understand the nature of their illness and of the treatment, and they must be made aware of and accept the risks inherent in the latter. They must also be in such an occupation that, when they resume work, they will be able to attend morning surgery at least one day a week for prothrombin control.

Contraindications.—These have been detailed by previous authors, especially Estes (1957). They may be summarized as follows: anticoagulants should not be given (1) in any condition tending to cause haemorrhage—for example, purpura; active peptic ulcer; gastric, colonic, or bladder carcinoma; oesophageal varices; haemorrhoids; and, probably, recent cerebral thrombosis; (2) in impaired hepatic or renal function; (3) where the patient is not sufficiently dependable or co-operative in regard to taking the proper dosage of the drug, or in attending as directed for blood tests and

the results of same; and (4) where the patient is not intelligent enough to carry out emergency treatment for himself if haemorrhage should occur.

Difficulties in General Practice

The chief difficulty is the transport of blood samples to the laboratory in time for testing on the day they are taken. The postal service is of course too slow. For the first 12 months they were taken by private car, later by public bus service. Because of transport difficulties the samples occasionally failed to arrive in time. As the laboratory will not carry out tests on specimens 24 hours old further samples had to be taken next day. Watson (1956) and Neilson and Briggs (1957) claim that a sufficiently accurate estimation can be made on specimens not more than 24 hours old, but Dr. C. R. Murdock, of the local laboratory, thinks that this is not so (personal communication). Recently, by courtesy of the local hospital committee, a satisfactory collection service has been arranged, and the samples travel up to the laboratory in the hospital box.

It would be difficult to carry out this treatment in a single-handed practice, as it is necessary for the satisfactory working of the scheme for someone capable of taking the blood and adjusting the dosage to be in attendance always at the appropriate times should one doctor be absent for any reason.

Precautions

Before treatment was started the patients were warned of the dangers inherent in the treatment and also of the possible dangers in stopping too abruptly. They were also told of the need for regular attendance for prothrombin tests and the necessity for ascertaining the result of the tests, together with any change of the dosage, on the same evening. All cases were blood-grouped by the courtesy and co-operation of the Northern Ireland Blood Transfusion Service. An extra page was stuck in the blood group cards stating: "I am receiving anticoagulants; my prothrombin is approximately 20%. In the event of haemorrhage or accident please call a doctor or consult my own doctor, Dr., Tel., as I may require an injection of vitamin K₁ (10 mg. of 'konakion' or 'mephyton')." I understand a similar card is supplied by the American Heart Association (*British Medical Journal*, 1958). In addition, each of our patients is provided with two 10-mg. gelatin capsules of phytomenadione (vitamin K₁) to take by mouth if he notices bleeding from any of the body orifices and warned to contact us immediately if this should occur.

Hospital treatment, including blood transfusion if required, should be available within reasonable distance. If the subject is likely to be out of reasonable distance from a hospital and/or testing laboratory—for example, holidaying abroad—it may be wise to reduce the dosage of anticoagulant by 5–10% below that which he ordinarily takes to keep him at optimum level, or, alternatively, he may reduce the dosage by 10–15% on one day a week in order to check any fall in the prothrombin level which may be occurring. The patients are also warned against certain drugs, especially acetylsalicylic acid, which, in addition to its irritant effect on the gastric mucosa, may also lower the prothrombin percentage. Bay *et al.* (1954) report that 4 g. of acetylsalicylic acid may prolong the prothrombin time to twice normal. Olwin and Koppel (1957) recommend

that never more than 15 gr. (1 g.) of salicylates should be taken in one day. Phenylbutazone ("butazolidin") is contraindicated, as also are broad-spectrum antibiotics (Toohey, 1958). Marked alteration in the amount of alcohol imbibed daily may cause a fluctuation in the prothrombin level (Olwin and Koppel, 1957).

Any deficiency of vitamin C should be corrected and an adequate intake in the diet ensured (Wright *et al.*, 1954; Manchester, 1957).

Frequency of Tests

The recommended frequency of tests varies greatly. Jolly (1956) recommends intervals of 7 to 14 days. Olwin and Koppel (1957) say the period should never be longer than two weeks. Toohey (1958) controlled 105 out of 117 patients by testing only every 6 to 12 weeks. The other 12 patients were unstable but did not require testing more often than once in four weeks. However, he recommends more frequent tests during intercurrent illness. In the present series no patient went longer than eight days without testing unless on holidays, when other precautions, already described, were taken. This was because of sudden severe fluctuations, both upwards and downwards, which are partly due to the difficulty of accurately adjusting the dosage. It is very difficult to make a change of 2–3% in the daily dosage when that dosage is one tablet a day and only one strength of tablet is made—for example, "marcoumar."

Duration of Treatment

The duration of treatment recommended by different writers varies greatly. Estes (1957) suggests 6 to 12 months after the last thrombo-embolic episode; Breddin (1957) recommends one and a half to two years; Borg (1956) says two years at least, perhaps indefinitely. Askey and Cherry (1950) kept patients on it for two years. Foley and Wright (1949) and Suzman *et al.* (1955) suggest stopping after three years' freedom from symptoms. Tulloch and Wright (1954) have a few patients who have been under treatment for about eight years. Putnam (1957) has kept one patient on treatment for nine years.

It is proposed to continue with the present series indefinitely or until there is some indication for stopping. Treatment has been stopped in three cases. One patient is over 65 and had first a gastro-enterostomy for chronic duodenal ulcer and later a partial gastrectomy for stomal ulcer. He had three months' anticoagulant treatment. The other two patients were diagnosed radiographically as having duodenal ulcers after investigations for dyspepsia. They had seven and eight months' anticoagulant therapy. Fortunately there were no overt haemorrhagic incidents in these patients with duodenal ulcers.

Discussion

Provided the laboratory facilities are reasonably close at hand long-term anticoagulant treatment by general practitioners for coronary thrombosis and related conditions is now a practical proposition. If it becomes universal the resulting increase in the number of tests to be done will place a heavy burden on the laboratory services, and some selection of cases will probably be necessary. This will pose many ethical problems. In America, where the patient must pay for services rendered, the cases will probably be selected automatically by the patients' means, and any extension of the laboratory services required will be financed automatically. Putnam (1957) states that one of the

causes of patients giving up long-term therapy in his series was that of expense and trouble. Under the National Health Service of Great Britain and Northern Ireland direct cost to the patient is not, of course, a selective factor. A heavy burden will also be thrown on the general practitioner, which was not envisaged when the capitation rate was struck, and it is a burden which will snowball as the years pass: the more successful the treatment the more patients will survive to require it.

Further, if the treatment is to be extended to every case which might benefit thereby as regards prolongation of life, regardless of age or capacity for work or ability to care for himself, the number of cases might be expected to increase threefold or fourfold, as not only would older cardiac infarcts become eligible, but also cases of intermittent claudication, pulmonary emboli, arterial embolism, recurrent thrombophlebitis, and auricular fibrillation. The latter might be included with advantage now in the case of younger people. Much increased laboratory facilities would therefore have to be provided. At present it is often a very difficult decision whether to start a particular case on long-term treatment, and, once started, whether to continue indefinitely. If further experience shows that it is almost as dangerous to stop long-term anticoagulants as never to begin, it will then be necessary to carry on indefinitely or until there is some strong indication for stopping.

While the present series is too small for any statistical conclusions, the results tend to agree with the favourable response reported by other writers. Ten men and two women had at least one attack of coronary infarction each in the past three years. No fresh attacks have occurred during anticoagulant treatment, though three of the cases have had at least one relapse before beginning long-term anticoagulant therapy in a shorter period of time than they have been under treatment.

Summary

The many favourable reports on long-term anti-coagulant therapy in coronary thrombosis coming from hospital and consultant practice are reviewed. Their multiplicity is in sharp contrast to the paucity of reports of similar treatment by general practitioners.

The experiences of a general practitioner in providing long-term anticoagulant therapy for 12 cases of proved coronary thrombosis are described. The period of treatment varied from 3 to 33 months and is still continuing. There had been no mortality at the time of writing. Indications, contraindications, precautions, and difficulties peculiar to general practice are outlined, and ethical and other problems in the selection of cases are discussed.

I am indebted to my partner, Dr. T. M. Hanna, my wife, Dr. Sandra Wylie, and Miss M. Gilmore for their practical and clerical assistance; to Dr. C. R. Murdock, the Central Laboratory Northern Ireland Hospitals' Authority, for doing the prothrombin tests; to the East Antrim Hospitals' Management Committee for its co-operation in the transportation of specimens; and to Dr. E. A. Cheeseman for his advice on statistics.

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MESENTERIC ADENITIS IN ASSOCIATION WITH ASCARIASIS

BY

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Hyperinfestation of the intestine with roundworms (*Ascaris lumbricoides*) is common in tropical climates and is due predominantly to low socio-economic and cultural levels. The clinical syndromes produced by hyperinfestation are many and varied, and the surgical complications of ascariasis, though perhaps less well known, include intestinal obstruction, perforation, and peritonitis, particularly in children (Ochsner *et al.*, 1949; de Silva, 1957).

In a case of intestinal obstruction due to roundworms it was noticed that the visceral peritoneum was lightly covered with a sticky yellowish fluid, and in five subsequent cases, the histories of which are given below, a similar fluid in the peritoneum was accompanied by hyperinfestation of the intestine with roundworms and well-marked mesenteric adenitis. This combination of lesions has not been described previously in the available literature.

Case 1

A boy aged 13 was admitted to hospital because of right-sided colicky abdominal pain of two days' duration. He had been treated for worms with Ayurvedic (native) medicines shortly after the onset of symptoms, but this had only increased the pain. He had not vomited, nor did he complain of nausea, but he had been constipated for three days. There were no other symptoms, nor had there been a history of similar attacks in the past.

On examination he was in good condition; his temperature was 98° F. (36.7° C.) and pulse rate 88 a minute. The lymph nodes were not enlarged. The abdomen was slightly distended, with guarding and marked tenderness in the right iliac fossa. There was tenderness also in the recto-vesical pouch on rectal examination. A