

cerned, after the fullest consultation with the medical profession. Both parties, however, are seriously handicapped in making such decisions by the lack of meaningful statistics and, although I am only too well aware of the inadequacy of my survey, I would submit that it provides significantly more information on the incidence and distribution of cases of chronic renal failure in the area surveyed than was heretofore available. The data are obviously restricted and cannot be used to determine provincial and national requirements, but they do permit the conclusion that more dialysis facilities are needed in southeastern Ontario than are currently available. At the present time it is extremely difficult to decide what facilities should be provided and, as Dr. Price implies, the tentative estimates in my article may well be inadequate.

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R.C.A.M.C. PLAQUE AT YPRES

To the Editor:

In the December 25, 1965 issue (*Canad. Med. Ass. J.*, 93: 1373, 1965) you published a letter concerning the project 1 Field Ambulance R.C.A.M.C. was considering, to dedicate a plaque to Lt. Col. John McCrae, the author of the poem "In Flanders' Fields", and to all ranks of The Canadian Army Medical Corps and The Royal Canadian Army Medical Corps who lost their lives in the First and Second World Wars.

I wish to report that this project is now complete and that it was one of the most satisfying experiences in which I and my unit have ever participated. The warmth, hospitality and respect that still exist in Ypres for the Canadian troops of the First and Second World Wars know no bounds.

If any members of The Canadian Medical Association should ever have the privilege of visiting Ypres, there is no doubt that they too will find this a town where Canadians will be forever welcome. In particular, I would like to mention Dr. Caenepeel, a local veterinarian and an authority on the Ypres Salient, who is probably one of the most memorable personalities I have ever met in my life, and Mr. F. A. Vandevoorde, O.B.E., a Belgian citizen who instituted the playing of the "Last Post" at the Menin Gate and who has maintained this ceremony for over 12,000 playings—he received the O.B.E. from the Queen on the occasion of the 10,000th playing.

As a result of my letter in the Journal, numerous civilian and military members of the profession donated over DM 1700.00 to this project. These moneys were used exclusively for the purchase of the plaque and the surplus is being forwarded to the McCrea Memorial Society in Guelph to assist them in their project of preserving the McCrae birthplace. All administrative costs in connection with the ceremony are to be borne by the Unit Fund 1 Field Ambulance.

I would like to express the sincere gratitude of both myself and all ranks of 1 Field Ambulance R.C.A.M.C. to those who donated to the project and made it possible.

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THE PHYSICIAN AND THE ENGINEER

To the Editor:

I fully concur with the comments that Dr. H. E. Driessen, (*Canad. Med. Ass. J.*, 94: 918, 1966), and Dr. E. Lewellyn Thomas, (*Ibid.*, 95: 35, 1966), made in their letters to the Journal regarding the editorial "The Physician and the Engineer".

I would like to add that in September 1965 a Canadian Medical and Biological Engineering Society was founded. The Society is holding its first annual meeting and scientific session on September 8 and 9, 1966, at the National Research Council in Ottawa.

The aim of the Canadian Medical and Biological Engineering Society is to bring together all individuals in Canada who are actively engaged in medical and biological engineering in the broadest sense.

The Society has been recognized by the Medical Research Council and the National Research Council, both of which have made a grant towards the expenses of holding the conference.

This is another important step in Canada in bringing the engineering disciplines closer to the biological and medical disciplines, in order that the fullest use can be made of developments in these disciplines for the solution of problems relating to the care of mankind and the control of his environment.

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ANKYLOSING SPONDYLITIS

To the Editor:

I would like to comment on the stimulating article on ankylosing spondylitis by Drs. T. D. Kinsella, F. R. MacDonald and L. G. Johnson, in the issue of July 2 (*Canad. Med. Ass. J.*, 95: 1, 1966).

The risks of radiation treatment referred to in the article apply to a method not generally employed today. As Dr. D. C. Graham (reference 13) points out, the reported cases of leukemia mostly occurred in patients treated by large fields with repeated courses giving a high total dose but a low dose in each course. For many years it has been our policy to give a single course of radiation limited to the areas causing symptoms. This gives dramatic relief of symptoms in most cases.

Incidence of Aplastic Anemia and Leukemia

The case of aplastic anemia reported in the series had an unusually high total dose of radiation given in repeated courses. While such treatment undoubtedly can cause aplastic anemia, I would like to point out that the reference given (Dr. Stewart and Dr. Dische, reference number 14) refers to bone marrow changes within the treated area. They do not report a single case of clinical aplastic anemia. Incidentally, the same authors noted that 39% of the cases had marrow hyperplasia and 79% had significant marrow lymphocytosis prior to treatment. Even before treatment, patients with ankylosing spondylitis have a relatively high incidence of bone marrow abnormality and anemia.

Furthermore, many of these patients receive phenylbutazone. This certainly causes marrow aplasia and has been reported to cause leukemia.

The cases of leukemia occurring in patients with spondylitis suggest a tenfold increase in this relatively uncommon disease. The real increase may be lower as some were diagnosed posthumously. The single case of leukemia reported in the present series hardly justifies the term "great risk" when considering the treatment of this crippling disease.

Matched Series

I am sure the authors are well aware of the pitfalls of retrospective case matching. It is usual for most of the severe cases to have some form of treatment. Further, the numbers would be very small, even if the series had been randomly selected in advance. Were there any early cases in the series in which only a part of the spine was irradiated? If so, it would be of interest to compare the present radiological changes in the treated and untreated spine.

On reading the above, I realize that I sound more critical than I intend regarding this most interesting paper. The point I wish to make is that an effective and relatively safe method of treatment (radiation) has been abandoned precipitately. In my experience a striking improvement is produced by radiation in most cases of ankylosing spondylitis providing this is followed by energetic measures to maintain the posture and chest expansion. These must be continued daily for the patient's lifetime.

The relative results and risks of substituting phenylbutazone for radiation in the treatment of ankylosing spondylitis would be of great interest. Few people have a wide experience of both methods. Until this information becomes available I would certainly consider treatment by radiation in cases with progressing disability. The progress of this disease can be very insidious and my impression is that phenylbutazone is less effective than radiation.

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To the Editor:

The interest and perceptive comments of Dr. Muirhead regarding the article by Dr. MacDonald, Dr. Johnson and myself are sincerely appreciated. For the sake of clarity, the points which he raises will be reviewed in their order of presentation in his letter.

1. The time-dose relationship of leukemia and radiation therapy in ankylosing spondylitis is generally accepted to be that noted by Dr. Muirhead. That this is not an invariable relationship, however, can be seen in Dr. Graham's¹ original report wherein one of his patients developed leukemia after receiving 677 r (mean dose) over a period of eight months and the other 533 r (mean dose) over a period of four months.

2. Dr. Muirhead is correct in noting that Drs. Stewart and Dische² did not refer to *clinical* aplastic anemia in discussing their patients. What these authors did refer to in their excellent article was the development of bone marrow aplasia in *all* cases of ankylosing spondylitis who were studied by pre- and post-irradia-

tion bone marrow smears. They further noted that this marrow aplasia was found in patients studied from two days to six months post-irradiation; in addition, in patients studied from 15 months to 14 years post-irradiation it was found that marrow regeneration was usually incomplete and, indeed, in seven out of 10 of this group of patients the marrow was aplastic or hypoplastic. We would (and did) interpret these data to indicate that patients with spondylitis who are treated by radiation are likely to develop this complication.

3. The recent report by Brown and Doll³ leaves no doubt concerning the relationship of the markedly increased incidence of leukemia in some patients with spondylitis to the prior administration of therapeutic radiation. These authors also comment on the increased number of spondylitic deaths from aplastic anemia and from soft tissue carcinomata arising in areas which have been secondarily exposed to ionizing radiation in the course of the treatment of the spondylitis. For the sake of clarity it should be pointed out that their conclusions were based on the study of 14,554 spondylitics who received radiation therapy.

4. As Dr. Muirhead points out, we are well aware of the pitfalls of retrospective case matching. It was because of these pitfalls that the two groups of "matched patients" were not only compared with each other but, as is clearly stated in the text, with the entire group in their response to therapeutic radiation.

5. On reviewing the treatment data it was found that two patients had received only "partial" radiation. Although both progressed to some extent in the irradiated areas, they also progressed in non-irradiated areas. It is obvious that no meaningful conclusion could be based on these data, but we would agree with Dr. Muirhead that a long-term prospective evaluation of his proposal would be of value.

6. From the data presented in our article and in this letter we could not accept the statement that radiation therapy in ankylosing spondylitis is "effective and relatively safe". The "striking improvement" encountered in the experience of Dr. Muirhead is alluded to in our article (page 8, paragraph 2) wherein we note the usually encountered remission of two years after radiation. Following this period, relapse occurred and continued during the period of the follow-up.

7. With respect to the therapeutic comparison between radiation and phenylbutazone, we believe that our data demonstrate that radiation therapy does not halt the progression of ankylosing spondylitis. Similarly, there is no evidence that phenylbutazone influences the ultimate prognosis in this disease. We cannot, of course, comment on the impression which Dr. Muirhead has formed concerning these two types of therapy since he does not provide the data which lead him to this impression.

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