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AN OBSERVATION ON THE EFFECT OF MALARIA IN LEUKAEMIA

BY

J. W. S. MACFIE

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On a previous occasion (1917) it was shown that in a case of lymphatic leukaemia a great reduction in the number of leucocytes took place when the patient developed malaria. The leucocytes, which had numbered as many as 286,000 per c.mm. before the attack, were reduced to 59,000; but the ultimate effect was not observed, as the patient left Accra for a more healthy district and was consequently not seen again. The effect of an attack of malaria in leukaemia has again been observed recently, on this occasion in a case of the myelogenous type. For this reason, and because the examinations were in some respects more complete, a brief record may be of interest.

The patient was a native boy, aged 18 years, suffering from myelogenous leukaemia. He complained of nothing but a little pain and 'hardness' on the left side of the abdomen. His spleen was greatly enlarged, reaching downwards to a point two inches below the umbilicus; and he was anaemic. The superficial lymphatic glands were not palpably enlarged. He had not recently suffered from fever, and dated back the onset of his illness only six weeks. He was first examined by me on the 5th of August, 1919, and was subsequently seen weekly until the 9th September; that is, six examinations were made at intervals of seven days.

The treatment given was tartar emetic, to which was added quinine when it was found that the patient was infected with malaria. The details were as follows:—

Intravenous injections of tartar emetic, one grain each, on August 6th, 9th, 11th, 13th, 17th, 19th, 22nd, 25th, 28th, 31st, September 2nd, 4th, 6th, and 8th—total 14 grains.

Quinine sulphate, 30 grains daily, by the mouth in solution, from August 20th to September 9th.

The results of the blood examinations are shown in the Table and in the Graph. It will be noted that the number of leucocytes per

SUCCESSIVE EXAMINATIONS OF THE BLOOD IN A CASE OF MYELOGENOUS LEUKAEMIA.

Date of observation		Blood Corpuscles per c.mm.		Examination for Malaria parasites	Remarks
		White	Red		
August	5th	326,250	3,047,000	Neg.	Intravenous injections of tartar emetic started on Aug. 6th.
	12th	104,870	2,451,340	<i>P. falciparum</i> : not numerous	Morning temperature on Aug. 11th, 101° F. ; on Aug. 13th, 100° F.
"	19th	62,900	3,334,400	<i>P. falciparum</i> : numerous	Quinine sulphate, 30 grains daily, orally, started on Aug. 20th.
"	26th	162,130	3,432,150	Neg.	
September	2nd	290,940	3,200,000	Neg.	
"	9th	364,375	2,906,250	Neg.

c.mm. was reduced from 326,250 to 62,900 between the 5th of August and the 19th, a phenomenon which might have been attributed to either the treatment with antimony, which was started on the 6th, or to the intercurrent malaria (*P. falciparum*), which developed about the 12th of August. On the 20th of August quinine was given for the first time. Subsequently malaria parasites were not again found in the blood, and although the antimony treatment was continued the number of leucocytes increased steadily, so that on the 9th of September they were more numerous than they had been at the time of the first examination.

In myelogenous leukaemia, just as was previously observed in lymphatic leukaemia, a notable reduction in the number of leucocytes coincides with the appearance in the blood of malaria parasites. This reduction is not permanent, and is rapidly effaced by treatment with quinine.

Incidentally this case shows also, (1) that intravenous injections of tartar emetic in the doses given have no beneficial action in myelogenous leukaemia, and (2) that such injections do not prevent the development of an attack of malaria (*P. falciparum*).

REFERENCE

- MACFIE, J. W. S. (1917.) A Note on the Occurrence of Leukaemia in the Natives of West Africa. *Report of the Accra Laboratory for the year 1916*, pp. 39-42. J. and A. Churchill, London.