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STUDIES IN THE TREATMENT OF MALARIA

XXIII. ORAL ADMINISTRATION OF QUININE SULPHATE GRAINS 30 ON EACH OF TWO CONSECUTIVE DAYS WEEKLY, OVER A PERIOD OF FIVE WEEKS, IN MALIGNANT TERTIAN MALARIA

BY

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All the cases were adult males, infected in West Africa. In every instance a diagnosis of malignant tertian malaria was made microscopically, and in all cases trophozoites were present in the blood on the day treatment commenced. Blood examinations of ordinary thin films were made daily.

The records of the observations are given in the tables, in which:—

o	= absence of fever and trophozoites.
1, 2, etc.	= number of trophozoite febrile relapses weekly.
1 [*] , 2 [*] , etc.	= number of non-trophozoite febrile attacks weekly.
t ¹ , t ² , etc.	= number of non-febrile trophozoite relapses weekly.
c ¹ , c ² , etc.	= number of days on which crescents were present weekly.

NOTE.—A rise of temperature above 100° F., of which the nature is unknown is termed a *febrile attack*. A similar rise of temperature accompanied by trophozoites in the blood at the time, or within three days, is termed a *trophozoite febrile relapse* or *true relapse*. The term *paroxysm* is used indifferently to denote any febrile disturbance of 100° F. or more.

TABLE I.

Results of oral administration of quinine sulphate grains 30 on each of two consecutive days weekly for 5 weeks, in malignant tertian malaria.

Number of case	Date of end of treatment	Temperature fell to normal in — days after first dose	Trophozoites disappeared from cutaneous blood in — days after first dose	Number of febrile paroxysms (trophozoite and non-trophozoite) and results of blood examinations during treatment				
				Week of treatment				
				1st	2nd	3rd	4th	5th
1376	24.11.17	1	3	o 1 c ²	o c ¹	o c ¹	2	t ² c ²
1377	29.11.17	1	2	o	o c ¹	o	1*	o
1378	29.11.17	3	2	o	o	o	o	o
1379	29.11.17	1	4	o	o	o	o	o
1380	29.11.17	2	2	o	o	o	o	o
1381	29.11.17	Same day	4	o c ²	o c ²	o	o c ¹	o
1382	29.11.17	3	2	o c ¹	o	o	o	o
1383	29.11.17	Same day	2	o c ¹	o	o	o	o
1384	1.12.17	1	2	o	o	o	o	o
1385	1.12.17	1	2	o	1*	o	o	o
1386	6.12.17	1	2	o c ²	o	o	o	o
1387	13.12.17	1	2	o c ²	o c ²	o c ¹	o c ¹	o
1388	13.12.17	Apyrexia	2	o c ²	1*	t ¹	o	o
1389	13.12.17	1	2	o c ²	o c ¹	o	o	o
1390	13.12.17	Same day	3	o	o	o	o	o
1391	20.12.17	1	1	o	o	o	o	o
1392	17.11.17	2	2	o	o c ²	o c ²	...	...
1393	29.11.17	2	4	o c ¹	o c ¹	o c ¹	...	...

1 Four days are allowed for the initial fever to subside and for the disappearance of trophozoites from the blood. The absence of fever and trophozoites in this column refer to the last two days of the week only.

TABLE II.

Summary of Table I.

Week of treatment	1st	2nd	3rd	4th	5th
Number of cases treated	18	18	18	16	16
Number of cases having trophozoite febrile relapses	0	0	0	1	0
Number of cases having non-trophozoite febrile attacks	0	2	0	1	0
Grand total of all febrile cases	0	2	0	2	0
Total number of trophozoite febrile relapses ...	0	0	0	2	0
Total number of non-trophozoite febrile attacks	0	2	0	1	0
Grand total of all febrile paroxysms ...	0	2	0	3	0
Number of trophozoite cases (febrile and non-febrile)	0	0	1	1	1
Number of crescent cases	9	7	4	2	1

TABLE III.

Analysis of TABLE II.

Week of treatment	1st	2nd	3rd	4th	5th	Average per week
Percentage of trophozoite febrile relapse cases per cases treated ...	0	0	0	6.0	0	1.2
Percentage of all febrile (trophozoite and non-trophozoite) cases per cases treated	0	11.0	0	12.5	0	4.7
Percentage of all trophozoite (febrile and non-febrile) cases per cases treated	0	0	5.5	6.0	6.0	3.5
Percentage of crescent cases per cases treated	50.0	39.0	22.0	12.5	6.0	26.0

In one of the eighteen cases (Nos. 1376-1393) treatment was commenced during an apyrexial period; in the remaining seventeen cases the temperature fell to normal either on the same day or in one to three days.

Trophozoites disappeared from the blood in one to four days.

Relapses

During treatment. Owing to the discharge from hospital of two cases in the fourth week, the number of cases treated was eighteen in the first four weeks and sixteen in the fifth week.

The average weekly number, over a period of five weeks, of cases which had (1) trophozoite febrile relapses was 1·2 per cent. of cases treated, (2) non-trophozoite febrile attacks 3·5 per cent., (3) febrile paroxysms, trophozoite and non-trophozoite, 4·7 per cent., (4) trophozoite relapses, febrile and non-febrile, 3·5 per cent., and (5) crescent relapses, 26 per cent.

After treatment. The cases were not observed.

SUMMARY

As a palliative, quinine sulphate grains 30 on each of two consecutive days weekly, over a period of five weeks, suffices to keep the blood free from trophozoites and to prevent relapses in the great majority of cases. It is noteworthy that the percentage of cases having crescents in the peripheral blood diminishes each week, viz., from 50 per cent. in the first week to 6 per cent. in the fifth week of treatment.