

Studies in the Treatment of Malaria

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To cite this article: Lieut.-Col. J. W. W. Stephens, W. Yorke, B. Blacklock, J. W. S. Macfie, C. Forster Cooper & H. F. Carter (1919) Studies in the Treatment of Malaria, *Annals of Tropical Medicine & Parasitology*, 13:1, 63-67, DOI: [10.1080/00034983.1919.11684182](https://doi.org/10.1080/00034983.1919.11684182)

To link to this article: <http://dx.doi.org/10.1080/00034983.1919.11684182>



Published online: 24 Mar 2016.



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STUDIES IN THE TREATMENT OF MALARIA

XXII. INTRAMUSCULAR INJECTIONS OF QUININE BIHYDROCHLORIDE GRAINS 15 ON EACH OF TWO CONSECUTIVE DAYS ONLY, IN MALIGNANT TERTIAN MALARIA

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Undertaken at the request of the War Office

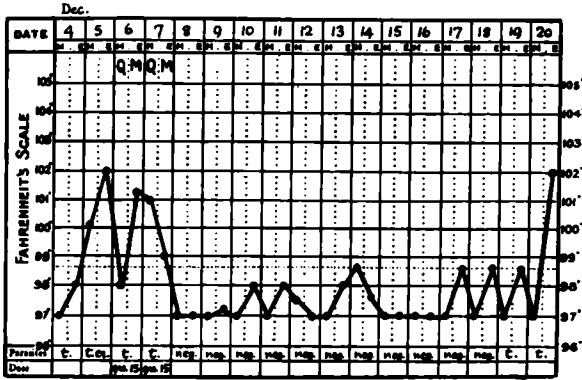
(Received for publication 2 February, 1919)

In previous studies (1917 and 1919) we have recorded the results of intramuscular injections of quinine bihydrochloride in simple tertian malaria. The present observations refer to malignant tertian malaria.

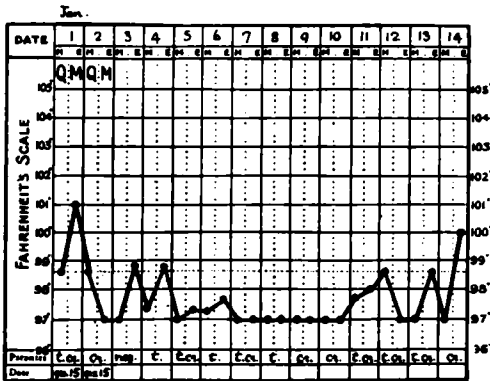
The treatment was an intramuscular injection of quinine bihydrochloride (grains 15 in 2 c.c. of water) on each of two consecutive days only. All the cases were adult males infected either in West Africa (Dakar) or in Macedonia.

In every instance a diagnosis of malignant tertian malaria was made microscopically, and in all cases trophozoites were present in

CASE 1359



CASE 1363



TABLE

Summary of results of intramuscular injections of quinine grains 15 on each of two consecutive days only in malignant tertian malaria.

* S. = Salonika. W.A. = West Africa.

Number of case	*Place of infection	Interval (in months) between first admission to a hospital with malaria and present treatment	Interval (in months) between leaving infected area and present treatment	Interval (in months) between arrival in England and present treatment	Date of end of treatment	Temperature fell to normal in — days after first injection	Trophozoites disappeared from cutaneous blood in — days after first injection	Trophozoite relapse occurred in — days after first injection	Febrile relapse (above 100° F.) occurred in — days after first injection	Remarks.
1347	S.	...	...	...	12.3.17	Appyrexia	2	8	No record	Crescents on 8th day.
1348	S.	...	...	...	16.3.17	3	1	18	...	Crescents persisted practically throughout. Quinine orally, grains 30 on 20th day.
1349	S.	...	...	...	3.4.17	Appyrexia	1	17	18	
1350	W.A.	1	1	0	17.11.17	Same day	2	18	19	Crescents on 4th-11th, 13th-15th and 18th days
1351	W.A.	1	1	0	17.11.17	1	4	13	18	Crescents on 5th-8th, 11th and 12th days.
1352	W.A.	1	1	0	17.11.17	1	3	8	11	Crescents on 6th and 8th days.
1353	W.A.	1	1	0	22.11.17	3	2	5	8	Crescents on 1st and 4th-7th days.
1354	W.A.	1	1	0	22.11.17	2	2	8	11	Crescents on 2nd, 3rd and 6th days.
1355	W.A.	1	1	0	23.11.17	1	2	17	18	Crescents on 2nd, 3rd and 9th-11th days.
1356	W.A.	1	1	0	28.11.17	2	3	17	16	Crescents on 2nd, 4th, 6th-9th, 11th, 14th and 16th days.
1357	W.A.	1	1	0	28.11.17	Appyrexia	2	6	9	Crescents on 2nd-6th days.
1358	W.A.	1	1	0	6.12.17	Same day	2	21	22	Crescents on 6th, 8th, 9th and 11th-21st days.
1359	W.A.	1	1	0	7.12.17	2	2	13	14	
1360	...	...	...	...	17.12.17	1	2	7	9	Crescents on 2nd, 4th, 6th and 7th days.
1361	...	...	...	...	2.1.18	Appyrexia	2	15	15	Crescents on 1st, 3rd, 4th, 6th-12th and 14th days.
1362	...	...	...	...	2.1.18	Appyrexia	1	6	15	
1363	...	...	...	...	2.1.18	1	1	3	13	Crescents on 1st day.
1364	S.	37	1	1	28.8.18	2	2	15	16	
1365	S.	26	1	0	23.9.18	1	2	7	8	Crescents on 1st-7th days.
1366	W.A.	1	1	0	23.11.18	2	2	14	16	
1367	W.A.	1	1	0	23.11.18	2	2	15	19	Crescents on 10th day.
1368	W.A.	1	1	0	25.11.18	2	2	20	23	Crescents on 4th-11th and 13th-18th days.
1369	S.	5	3	1	2.12.18	2	2	9	10	Crescents on 2nd day.
1370	W.A.	2	2	1	2.12.18	1	2	17	18	
1371	S.	4	3	2	3.12.18	Appyrexia	1	7	...	Crescents on 3rd day. Quinine orally, grains 45 on 8th day.
1372	S.	34	3	2	3.12.18	Appyrexia	1	16	...	Quinine orally, grains 45 on 17th day.
1373	W.A.	1	1	0	3.12.18	1	1	19	20	Crescents on 2nd, 4th-6th, 18th and 19th days.
1374	S.	16	1	1	4.12.18	Appyrexia	2	7	8	Crescents on 7th day.
1375	S.	3	4	3	4.12.18	Appyrexia	1	8	...	Quinine orally, grains 45 on 10th day.

the blood on the day treatment commenced. Blood examinations were made daily.

In the temperature charts:—

- t. = malignant tertian trophozoites.
- cr. = crescents.
- neg. = no parasites found.
- Q.M. = intramuscular injection of quinine bihydrochloride grains 15.

In nine of the twenty-nine cases (Nos. 1347-1375) treatment commenced during an apyrexial period; in the remaining twenty cases the temperature fell to normal within three days. Trophozoites disappeared from the cutaneous blood within four days. Observations regarding the crescents will be found in the 'Remarks' column of the table.

Relapses

A parasitic relapse occurred in all cases, trophozoites reappearing in the cutaneous blood in three to twenty-one days; in Cases 1353 and 1363 trophozoites were absent for respectively three and two days only. Febrile relapses occurred in eight to twenty-three days.

CONCLUSION

An intramuscular injection of quinine bihydrochloride grains 15 in 2 c.c. of water on each of two consecutive days only, causes the cessation of febrile paroxysms and effects the disappearance of trophozoites from the cutaneous blood in malignant tertian malaria. The action, however, is only temporary, a relapse occurring within three weeks, occasionally within a few days.

REFERENCE

- STEPHENS, J. W. W., YORKE, W., BLACKLOCK, B., MACFIE, J. W. S., COOPER, C. F., and CARTER, H. F. (1917 and 1919). *Ann. Trop. Med. & Parasitol.*, Vol. XI, p. 113, and Vol. XII, p. 402.