



CODEN [USA]: IAJPBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.1302417>Available online at: <http://www.iajps.com>

Research Article

**FALCIPARUM PARASITE MALARIA AND ITS
PREVENTIVE/SAFETY MEASURES: UNION OF BITTER
ALKALOID AND ANTIBIOTIC TETRACYCLINE THERAPY**¹Muhammad Awais Saeed, ¹Muhammad Hassan Shahid, ²Dr. Saba Mehreen¹DHQ Teaching Hospital, Dera Ghazi Khan²Medical Officer Lahore General Hospital**Abstract:**

Objective: The main idea of this research was to check the power in living organisms and unfavourable outcomes of a bitter alkaloid taken from a tree and an antibiotic tetracycline doxycycline union in epidemic of malaria which is the result of a parasite protozoan known *Plasmodium (P.) falciparum*.

Methodology: This was an eventual research based on the observations. This study was carried out in DHQ Teaching Hospital, Dera Ghazi Khan. Our research span over five months from September, 2016 to February, 2017. The participants of the study were 337 patients of malaria which was caused by the above-mentioned parasite were selected for the research. High, low and medium worth with the difference in the age, rectification time from fever and the clearance time for the parasite was checked. In this research, the occurrence of the deaths and other relation unfavourable occasions were also checked.

Results: Two hundred and fifty-seven patients found with *P. falciparum* and eighty-one patients found two different types of parasite in which one was the *falciparum* and the other one was *vivax*. The average time for the rectification of the fever was different for both of the patients. The time was greater in case of the patients affected by two parasites. The average clearance time from the single parasite was seventy points thirty-two hours and sixty-eight hours for the patient of two parasites. There were some patients who developed some side effect such as nausea. There percentage was three-point three percent. The rate of mortality was lower in this research. The rate was less than one percent.

Conclusion: A bitter alkaloid taken from a tree and an antibiotic tetracycline union treatment was used as therapy. It should be used with extensive safety measures against the malaria caused by the *falciparum* parasite.

Key Words: Alkaloid, antibiotic, tetracycline, union, *falsiparum*, CMH, malaria, *Plasmodium*.

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Please cite this article in press Agussalim et al., *Falciparum Parasite Malaria and Its Preventive/Safety Measures: Union of Bitter Alkaloid and Antibiotic Tetracycline Therapy*, Indo Am. J. P. Sci, 2018; 05(06).

INTRODUCTION:

Parasites are causing the malaria in most of the areas of the world. It is one of the essential reasons of the mortality in the world. The people being affected from this disease are about two crore every year in which ten lakh people loses their life [1]. There are four main types of the parasites which are causing malaria in the world in which falciparum is the main cause of disaster in this field. The patients who have infection of more than one parasite are the victim of falciparum as one parasite. The development of the parasites which are providing resistance to the antibiotics is a dangerous alarm for the health of the people of world especially for the people of the developing countries as Pakistan [2]. The combinations of various drugs against the malaria are being advised in most of the studies for good results against malaria [3, 4]. The parasites are showing resistance against the single drug treatment in most of the parts of the Asia. Therefore, the combinations of the two drugs against malaria are being used to rectify this problem [5, 6]. There is a report which is describing many side effects in case of the use of single drug against parasites. The high blood pressure, sleepiness and vomiting are the most common side effects [5, 7, 10].

Recent studies have proved the use of the unions of two different drugs against the malaria caused by falciparum and these studies are showing the loss of power of the quinine against this dangerous parasite [11]. The union of a bitter alkaloid taken from a tree and an antibiotic tetracycline are being used in UK but it is still being used as a doubtful drug against the same disease [6]. The mentioned area was greatly affected by this disease [12]. The outcome of the drugs against the diseases depends upon the hindrance of the parasites which is different in different regions. Therefore, it cannot be said as a confirmation that a combination of the drugs will work in every part of the country. This research will provide us with the check of power in living organisms and unfavourable outcomes of a bitter alkaloid taken from a tree and an antibiotic tetracycline doxycycline union against the parasites causing malaria.

METHODOLOGY:

This was an eventual research based on the observations. This study was carried out in DHQ Teaching Hospital, Dera Ghazi Khan. Our research span over five months from September, 2016 to February, 2017. The sufferers from twelve to sixty year of age and infected by the falciparum parasite as a cause of malaria were included in the research after getting the willingness. Participants having baby in their body or taking any treatment against the malaria were kept out from the research. All the

participants were admitted in the hospital for seven days for the medical treatment of combination of two above mentioned drugs against malaria and other medicines were also provided to remove the suffering of the participants from the side effects. Other medical treatment was provided after the prescription of the doctors. The condition of the participants, the background of their medical treatment and unfavourable conditions were gathered on regular basis. Different types of the tests and the evaluation by the doctor was carried out according to the schedule in the whole admission tenure. The samples of the bloods were collected two times in a day to know about the exact time of the clearance of the disease.

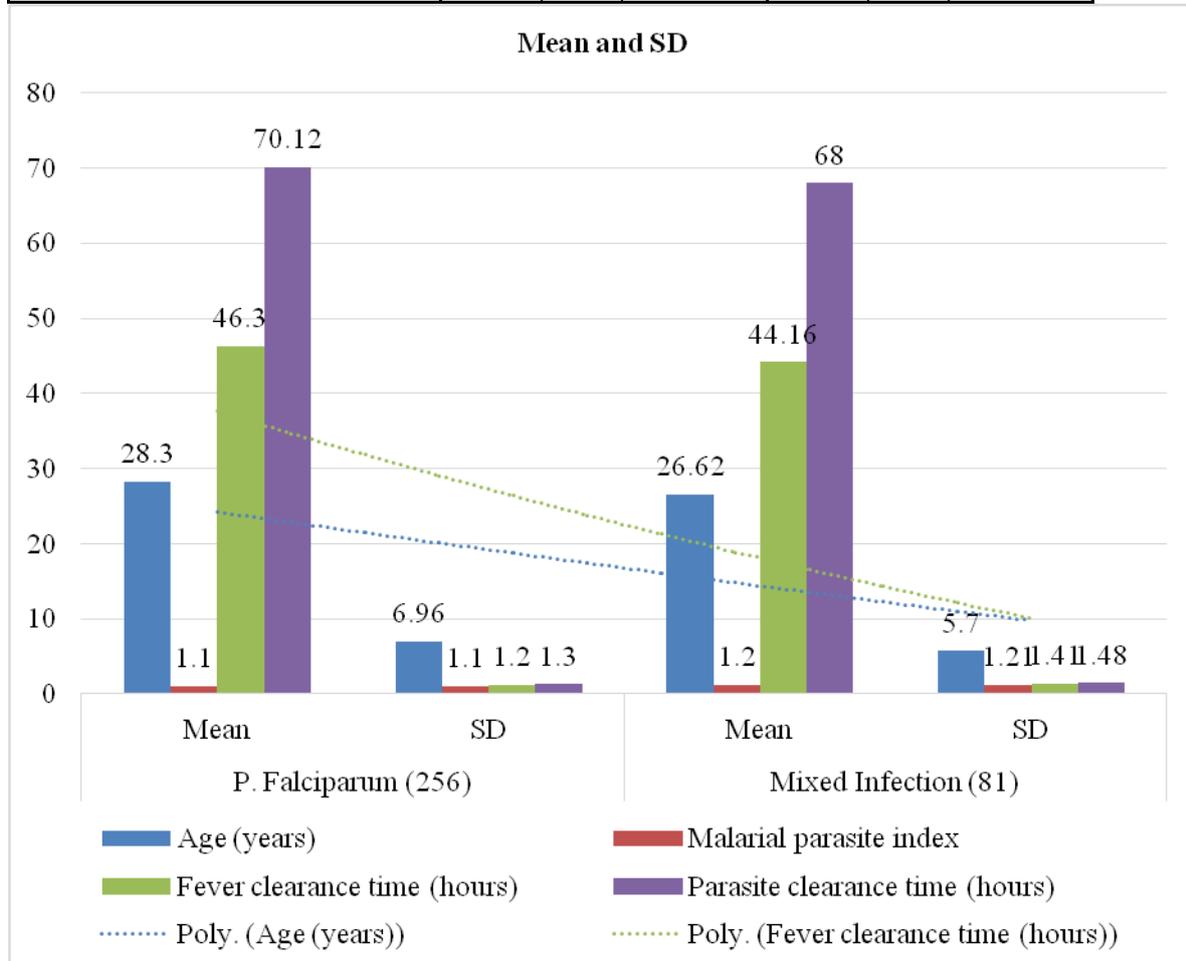
The efficiency and the power of the medical treatment are checked by the time of rectification of the parasite and the fever. There were different standards available to check the rectification time of both abnormalities. All the data of the patients was documented on the medical forms. All the participants were thoroughly examined on daily basis to check the side effects of the drugs and the performance of the drugs against the disease. SPSS software was used for the exact analysis of the data. High, low and medium worth with the difference in the age, rectification time from fever and the clearance time for the parasite was checked. In this research, the occurrence of the deaths and other relation unfavourable occasions were also checked.

RESULTS:

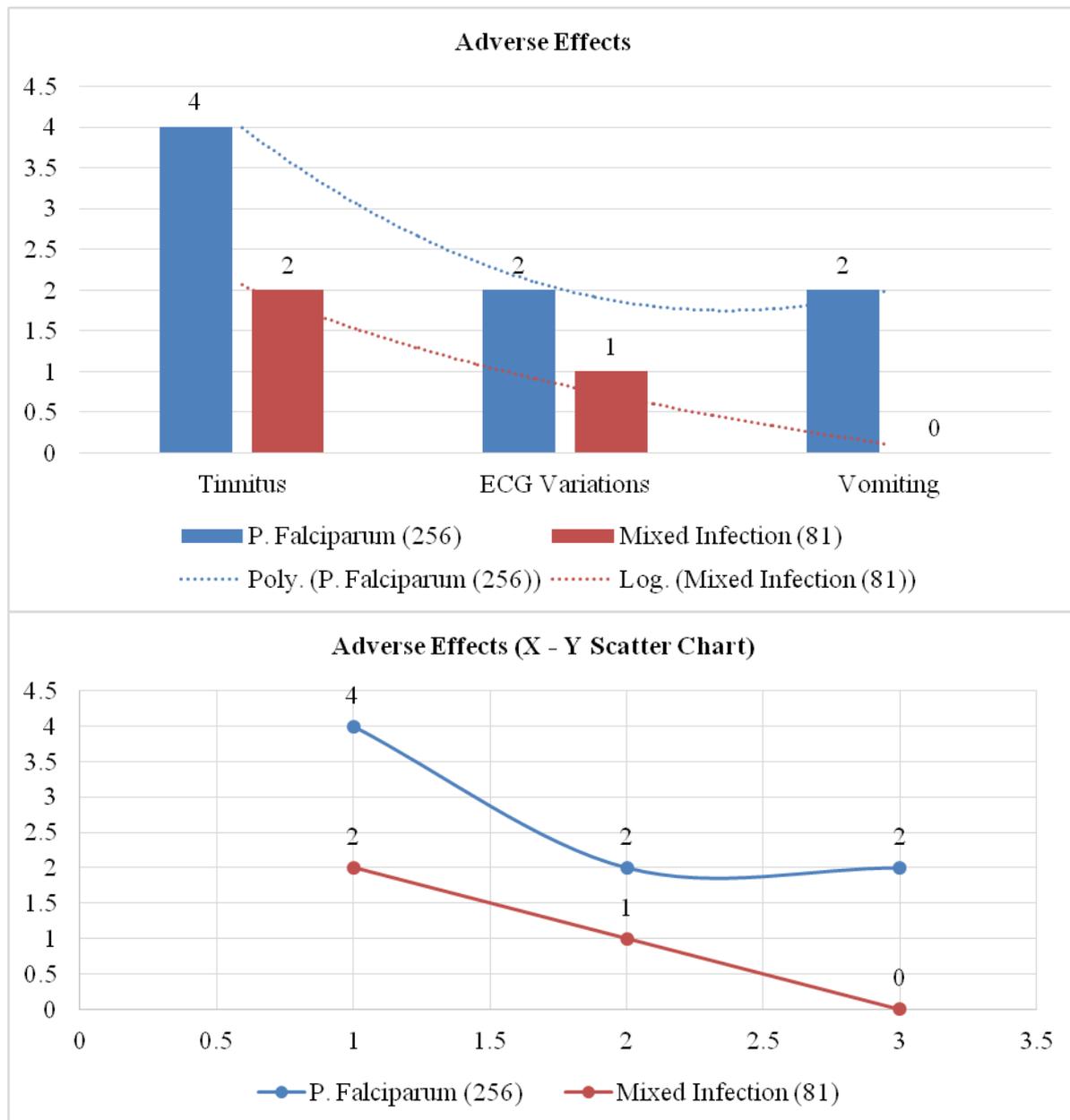
There were 337 patients who were found with all the requirements of the research were included in this research. Two hundred and fifty-six were found with infection of falciparum and other eighty-one were found with disease caused by two different parasites in which one was the common parasite. The average age of the participants was about twenty-eight years. The average clearance time of fever in the participants of the falciparum infection was forty-six point three hours and forty-four point six hours in the case of the infection caused by two parasites. The average rectification time from the parasite of falciparum infection was more than seventy hours in the sufferers and it was sixty-eight hours in the patients having infection more than one parasite. More than ninety six percent participants beard the treatment of the union of anti malarial drug as a bitter alkaloid taken from a tree and an antibiotic tetracycline without having any unfavourable condition. Only eleven patients found with some normal side effects such as nausea. Only two patients died who were infected by the falciparum parasite and no patient died in case of the infection caused by the two parasites. The mortality rate was very much lower in this research.

Table – I: Main parasite clearance time in *P. falciparum* was 70.32 hours

Parameters	P. Falciparum (256)			Mixed Infection (81)		
	Mean	SD	Range	Mean	SD	Range
Age (years)	28.3	6.96	12 to 51	26.62	5.7	14 to 43
Malarial parasite index	1.1	1.1	Up to 20	1.2	1.21	Up to 18
Fever clearance time (hours)	46.3	1.2	12 to 86	44.16	1.41	12 to 104
Parasite clearance time (hours)	70.12	1.3	24 to 136	68	1.48	24 to 130

**Table – II:** Adverse Effects in Patients

Adverse Effects	P. Falciparum (256)	Mixed Infection (81)
Tinnitus	4	2
ECG Variations	2	1
Vomiting	2	0



DISCUSSION:

This research described the effectiveness and preventive measures in use of anti malarial drugs of a bitter alkaloid taken from a tree and an antibiotic tetracycline as medical treatment against malaria which is initiated by the parasite plasmodium in different areas of the world. This research was carried out to check the resistance of these parasites against the drugs which were causing many other unfavourable conditions. This research provided the rectification time from the parasite as less than forty-seven hours which was much less than the time discovered by the other studies carried out in the world [5, 7, 13]. Some of the studies described the equal time with the treatment of single drug of quinine [14,15]. Some studies provided less rectification time [8, 16]. There is a much greater difference in the rectification time of the fever in

most of the studies carried out on the same topic [5, 7, 8, 14]. The rectification time of the fever was shorter than the previous studies [7, 13]. The average rectification time of the parasite was more than seventy hours in case of the infection caused by the plasmodium. This result was also different in most of the studies. Only one other research provided the same average time [5]. This discovered time was shorter than the time discovered in two more studies [7, 13]. Some studies provided the less time for the rectification of the parasite [8, 14, 16]. Unfavourable side effects were not monitored in most of the participants by the use of this combination of anti malarial drugs. Only three-point three percent participants were found with the ordinary side effects which were much less than the previous studies in the same field [5, 7 – 10].

This research was carried out on seven days treatment of the malaria by the use of combination of two drugs as treatment. The rectification time concluded in this study was found greater than the results of some other studies carried out in the same field. This is also a cheap treatment which is easily manageable by the people of the poor areas. The most affect limitation of this research is the set of rules for the selection of the participants. Pregnant women, patients having less than twelve-year age and women sex was not included in this study. There is not too much difference of this treatment on the excluded patients and included patients [18]. The duration of the treatment was also short because of fewer facilities available in the hospital and high economic expenses. This limitation should be solved for better results of the next studies.

CONCLUSION:

A union of bitter alkaloid taken from a tree and an antibiotic tetracycline should be used with preventive measures to save the people of the world from the life taking disease like malaria which is much dangerous in case of spread by falciparum.

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