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A RESEARCH STUDY TO DETERMINE THE MEFLOQUINE EFFECTS ON EYE

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Abstract:

Objective: *To investigate the effect of mefloquine on the visual condition.*

Patients and methods: *The study confirmed 67 patients with weekly mefloquine therapy (for malaria prevention) for 1 year. Visual acuity, intraocular pressure (IOP), dilated posterior segment and visual field (VF) were taken to determine the ophthalmic condition.*

Results: *Two of 69 patients had visual acuity pain and slight smearing. However, none of the shield's changes in the retina, VF, fundus and anterior or posterior segment. The average age of cases is 43.58 (84.05%) are men and 11 (15.94%) are women.*

Conclusion: *There is no risk of blindness after treatment with mefloquine for 1 year. In addition, more research is needed to assess the increased risk of long-term use.*

Key words: *mefloquine, presbyopia, antimalarial drugs, retinal toxicity.*

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INTRODUCTION:

Mefloquine is a medicine used to prevent malaria as an alternative medicine, which in recent years is considered to be more effective than prescriptions and the use of chloroquine[1-2]. In recent research by a recent UN mission, public opinion is likely to see this drug as a harmful drug that damages the retina when it developed and used the legend against the use of mefloquine. This concept may be incorrect, but everyone's primary task is to do more research and research to see if the drug is being used by people and to confirm its usefulness and effectiveness in saving human life[3]. People interested in drug production or patient treatment. In other studies, on this drug, it has been observed that the use of this drug has negative side effects in various body tissues, but no specific or specific studies of the side effects of this drug have been performed since. Retina[4]. Because there is no evidence of the retinal toxicity of this drug, the study was conducted to assess the effects on the visual apparatus and replace the myth impression[5].

PATIENTS AND METHODS:

This descriptive study was conducted at the Eye Unit-1 Jinnah Hospital Lahore for one-year duration from January 2019 to December 2019. The study involved 69 cases who received weekly mefloquine treatment for a year. For the prevention of malaria, mefloquine is administered once a week as a 250 mg tablet. Patients involved in OPD of the eye were examined with a slit lamp using Snellen visual acuity tables. Diabetes, hypertension, cataracts, any pre-existing illness or other preventive treatment as well as patients older than 70 years and older were excluded. Then the slit lamp examined the anterior segment along with the tonometry for recording the baseline. The dilated posterior segment examination was performed with a 90 D lens and a drop of pilocarpine was administered at the end of the examination. Subsequently, patients were followed at 3-month intervals for 1 year with mefloquine treatment. The same procedure was followed at each visit. To redefine the negative effects, the percentage for demographics, glaucoma and visual condition and bottom impact was calculated.

RESULTS:

67 confirmed cases, which underwent weekly therapy with mefloquine for a year, were evaluated. There were 58 (84.05%) men and 11 (15.94%) women (Table 1). The corrected visual acuity ranges from 6/6 to 6/12.

Table 1: Socio demographic profile of subjects

Sex	Frequency	Percentage
Male	58	84.05
Female	11	15.94

Intraocular pressure ranges between 10-18 mm Hg. The CD ratio is from 0.3 to 0.5. The patient's age is 20 to 65 years and the average value is 43 years. 2 (2.89%) of 69 patients with blurred vision and eye pain affected visual function. No VF defects were observed. None of them were accompanied by changes in the anterior or posterior segment. None of them experienced an increase or decrease in intraocular pressure (Table 2).

Table 2: Distribution of cases according to visual status after 1-year mefloquine therapy

Adverse effects	Visual status affected no of cases	Effect on visual status cases in %age
Eye pain	2	2.89
Blur vision	2	2.89
Intraocular pressure	-	-
Retinal toxicity	-	-

DISCUSSION:

Mefloquine is approved by the US Food and Drug Administration (FDA) for the treatment of malaria. There are five drugs approved for the prevention of malaria. These are doxycycline, mefloquine, proguanil (Malarone), atovaquone, hydroxychloroquine sulfate and chloroquine[6]. Of these, only mefloquine, chloroquine and hydroxychloroquine sulfate are stable enough to allow weekly dosing. Weekly dosing improves compliance with preventive dosing programs. Though, the resistance of malaria parasites to

chloroquine and hydroxychloroquine sulfate is quite common. As a result, mefloquine, doxycycline and atovaquone-proguanil are more often used to prevent malaria[7]. After the prophylaxis of malaria, mefloquine is administered as a 250 mg tablet once a week.

Unfortunately, mefloquine is also associated with neurological sequelae such as panic attacks, suicidal thoughts, anxiety, sleep disorders, nightmares, tremor, dizziness, headaches, mood swings and fatigue[8]. These effects are more common than prophylaxis at the therapeutic dose, even if there is no malaria. The frequency of adverse events reported following mefloquine administration is variable.

Common side effects of mefloquine include nausea, vomiting, dizziness, insomnia, unusual dreams, hallucinations and blurred vision. Although long-term use of mefloquine is associated with eye damage in rats, retinal disorders were not found in long-term users[9]. Full PubMed studies using the terms [mefloquine] and [eye disorder], [retinal disorder] did not reveal important references. Interestingly, in Google searches using the search terms [mefloquine] and [visual field defect], reference was made to malaria chemoprophylaxis describing a patient who received and identified mefloquine for 18 months[10]. People with bilateral pigmented epithelial retinal lesions. Unlike our patients, there was no significant change after long-term use of mefloquine. Recent studies published in this journal report another eye disorder associated with optic neuritis among Japanese peace-keeping forces of 1876 who used mefloquine to prevent malaria in Timor-Leste. Although in our study two patients complained of mild vision and blurred eye pain, no detailed anterior or posterior abnormalities were observed in the detailed ophthalmological examination[11].

Concerns have been raised about negative effects resulting from mefloquine prophylaxis. Because our searches and literature studies do not identify a single case of optic neuritis or mefloquine - associated retinopathy, these conditions may be a coincidence, not a result of chemical prevention[12]. Neuropsychiatric side effects are more significant and a wide range of neuropsychiatric symptoms have been previously reported among mefloquine users, including severe depression and acute psychosis. However, due to the nature of these negative effects, causal relationships are often not confirmed[13]. Various environmental factors, such as stress associated with international travel, tropical climate or difficult tasks, may also play a role or result from antimalarial activity, but may be particularly mefloquine. Recently, a non-comparative study reported a high incidence of side effects among Japanese travelers using mefloquine prophylaxis. However, their severity has not been explained.

According to earlier data from volunteers of the Peace Force for Energy Efficiency. The current study, one of the JSDF studies and expert review, showed that most of the side effects associated with mefloquine prophylaxis occur during the first few doses and then decrease[14]. It is beneficial for EA to start early because it can allow for an alternative anti-malarial transition before departure. In the light of the above discussion, although there have been some negative effects on human tissues, especially CNS, in various studies during malaria mefloquine prophylaxis, there were no significant side effects for retina in our study[15]. Therefore, this drug can now be used and there is no doubt in future studies, and long-term studies are ongoing.

CONCLUSION:

There is no risk of blindness after treatment with mefloquine for 1 year. More research is needed to assess the increased risk of long-term use. However, mefloquine can be safely used up to 01 years under regular supervision and control visits. The use of mefloquine is a safer drug and it has not been found in our studies / studies that it can cause some negative effects on the eyes. However, if the tests continue to achieve results, there will be no harm.

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