Case Report

Chloroquine Induced Psychosis in an adult patient with Amoebic Liver Abscess: a case report

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ABSTRACT

Chloroquine is used for chemoprophylaxis and treatment of malaria and other off-label indications like extra-intestinal amoebiasis, mostly in developing countries. In the literature chloroquine induced psychosis is mostly reported in children and when prescribed for malaria. Scarce data exists in the area of chloroquine induced psychosis in an adult population and when used for indications other than malaria. We report a 32 years old adult without any past and family history of any psychiatric disorder who developed psychosis after taking chloroquine prescribed for amoebic liver abscess. Chloroquine is commonly prescribed in developing countries and psychiatrists as well as other clinicians should be aware of this debilitating adverse effect of chloroquine.

Key words: chloroquine, psychosis, adult.

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INTRODUCTION

Chloroquine, a 4-aminoquinoline, synthesised in the 1930s by German scientist, who named it resochinis used for chemoprophylaxis and treatment of malaria, rheumatoid arthritis and lupus erythematosus [1]. Examples of off-labelled indications for chloroquine analogues use include dermatomyositis, sarcoidosis, polymorphous light eruption, disseminated granuloma annulare, porfiria cutanea tarda and extra-intestinal amoebiasis [2]. Chloroquine is a preferred drug especially in developing countries where Malaria is endemic due to multiple factors like absence of serious adverse events, presence of antithrombic and antilipidemic efficacy in addition to anti-inflammatory efficacy, being cheap and well tolerated compared to the other drugs, and a fast onset of action [3].

Side effects of chloroquine include gastrointestinal disturbances, headaches, skin reactions, hypotension, convulsions, extra-pyramidal symptoms, visual disturbances, depigmentation and loss of hair, and more rarely bone marrow suppression or hypersensitivity reactions such as urticaria and angioedema. As compared to other anti-malarial drugs the Neuro-Psychiatric side effects of Chloroquine are rare. They include headache, neuropathy, vertigo, depression, psychosis and mania, neuromuscular system-related symptoms such as myopathy, loss of sensation and atrophy in the proximal muscles. Although the incidence of serious neuropsychiatric adverse events has not been definitely established, they have been reported to occur at a rate of approximately 1:136005. It is thought that these adverse events result from idiosyncratic drug reactions [4-5].

Neuropsychiatric adverse events reported in the literature are generally those associated with the use of chloroquine in malaria and mostly in children. However, there is scarcity in literature in the area highlighting

the neuropsychiatric side effects of chloroquine when used in the treatment of amoebic liver abscess, for which chloroquine is commonly used in developing countries. With this case report, we aim to discuss a psychotic disorder due to chloroquine use in an adult male patient who was being treated for amoebic liver abscess and also to attract the clinicians' attention in this area by highlighting the side effects of chloroquine in this context.

CASE REPORT

We present a case of a Mr A, who is 32 years old gentleman with no significant past medical or Psychiatric history. He was admitted in general surgery ward of our tertiary care teaching hospital where he was diagnosed with amoebic liver abscess and underwent management in the form of percutaneous aspiration of pus and received intravenous antibiotics during his stay in the ward. He was discharged on chloroquine phosphate 600 mg in divided doses. After discharge the initial 4 days were uneventful. Since the fifth day Mr A started feeling that there is some supernatural power in his room and became extremely fearful and pleaded for constant company of family members. Following day started having irrelevant talk, muttering, aggression and suspiciousness and had a firm belief that some supernatural force is going to harm him. He was brought to our Psychiatry OPD by parents and was admitted as there was a risk of harm to others or self. In the ward patient became extremely aggressive and ran out and smashed random bikes. He was physically restrained as there was risk of harm to others and was later chemical restraint was applied. On mental status examination Mr A was unkempt, not cooperative for a detailed examination, rapport could not be established. He had a fearful mood and perplexed affect. He reported of delusion of persecution against unknown force or people. He also reported of auditory hallucinations where he could hear multiple voices which he was not able to comprehend. He also reported illusions and visual imagery related to a devil's shadow. Serial mental status examinations and a detailed examination on the third day of admission revealed that, his higher mental functions like attention, language, orientation and memory were within normal limits. His insight was grade 2 and his personal and social judgement was impaired. No significant abnormality was detected on general and systemic examination.

There was history of alcohol intake for last 4 years. But the dependence pattern could not be established and his last drink was more than one month prior to admission. Thus, the mental and behavioural disorders secondary to alcohol was excluded as a differential diagnosis. Other differential diagnosis considered were delirium secondary to hepatic complications and Central nervous system organic lesions leading to acute behavioural changes. Liver function tests though deranged were showing downward trend as compared to previous results. Ultrasonography of the abdomen showed hepatic abscess but size was significantly reduced as compared to previous scan during in-patient care in surgery ward. A surgery and medicine consultation were sought for same where both departments advised no further care from their side. Mr A had intact higher mental functions. Thus, delirium due to hepatic causes was ruled out. A computed tomography of the brain showed no abnormality. Other blood investigations like Complete blood count, serum electrolytes, blood sugar levels, renal function test were within normal limits. Tests for Hepatitis B and C were negative.

A structured clinical interview was carried out the next day when the patient was cooperative. A diagnosis of Organic delusional (schizophrenia- like) disorder according to International classification of diseases -10 (ICD-10) criteria for classification of mental and behavioural disorders was considered. His score on Brief Psychiatric rating scale (BPRS, 18 item) was 67 on admission. Chloroquine was discontinued and Olanzapine 10 mg in divided doses was chosen for treatment in view of good efficacy as antipsychotic in case of drug induced psychosis according to previous case reports [6], better agitation control, sedative property and free availability at our centre. On the 3rd day of treatment Mr A 's agitation was under control and by 5th day he was emotionally stable with no delusions and hallucination and there was significant decrease in the anxiety with BPRS Score of 25 on 5th day. His olanzapine was discontinued after 2 weeks after complete resolution of symptoms and patient did not have any psychiatric symptoms after 1 month of follow up.

DISCUSSION

Whenever a patient presents with abrupt onset psychotic symptoms and agitation, along with schizophrenia and acute psychosis, a diagnosis of organic psychosis due to prescription medications should be considered. Multiple case reports in the past have showed that prescription medication such as glucocorticoids and other steroids, anticholinergic drugs, L-Dopa, digitalis, disulfiram, quinolones, selegiline, isoniazid, Methylphenidate, topiramate, reserpine, isotretinoin, metronidazole and clonidine can induce psychosis [7-8]. The first case of chloroquine induced Psychosis was reported by Burrel and since then number of case reports and case series has been published in this area [9-10] but majority of the cases are reported in paediatric population and in cases of malaria and very few cases have been reported where chloroquine is used in adult population and for an indication other than malaria. The exact mechanism of chloroquine induced psychosis is not known but the role of different neurotransmitter systems, *i.e.,* polyamines excess, dopamine excess, Muscarinic cholinergic imbalance and prostlaglandin-E antagonism have been postulated [11-12]. Another mechanism considered for the explanation of neuropsychiatric adverse events is the drug's probability of decreasing the cortical flow of information by inhibiting P glycoprotein [13].

Chloroquine induced Psychosis is dose independent and may appear approximately within 2 hours or 40 days. In their review, Mohan and others reported chloroquine induced psychiatric adverse events in at least 10 cases where symptoms appeared between the third and 10th day after starting chloroquine use and disappeared within 1-2 weeks following discontinuation of drug. Bhatia used chloroquine and evaluated six cases that developed psychiatric adverse events. They reported that adverse events appeared between the 2nd and 7th day after the onset of treatment independently of the dose. In our case, psychotic appeared on the 5th day after the chloroquine use and that the symptoms improved significantly approximately within 2 weeks and did not recur subsequently. This can be explained on the basis of the absorption, metabolism, and excretion features of chloroquine and is consistent with the previous literature [4,14].

In the management of chloroquine induced psychosis best strategy is to discontinue chloroquine and symptoms may subside within 2 days without any further intervention. Previously antipsychotics like chlorpromazine and olanzapine have been tried with good results. We used olanzapine mainly for agitation control and as we work in a low resource government setting, we had to prescribe the antipsychotic which is available for no cost to the patients which is olanzapine at our centre [15].

This case highlights the fact that asking for medication history is a crucial part of psychiatry history taking as this can be easily missed and patient and caregivers don't report unless asked specifically for it. Also wrongly diagnosing the patient with Schizophrenia or Acute Psychosis can be devastating for the patient and the caregivers which can lead to prolonged and unnecessary treatment. Clinicians in the Non Psychiatric settings should be aware of this adverse effect of chloroquine and it should be used cautiously or if possible avoided in patients having history of severe psychiatric illness.

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