27th ECCMID

Post-malaria neurological syndrome:

Report of three cases from a Portuguese Malaria Reference Centre

André Silva-Pinto[1,2]
Andreia Costa[2,3]
Joana Alves[1,2]
Nélia Neves[1,2]
Pedro Abreu[2,3]
Cândida Abreu[1,2]
Lurdes Santos[1,2]
António Sarmento[1,2]

[1] Infectious Diseases Department, Centro Hospitalar São João, [2] Faculty of Medicine, University of Porto, [3] Neurology Department, Centro Hospitalar São João

PORTUGAL

Background

- Post-malaria neurological syndrome (PMNS) is rare as there are only 38 cases reported in the literature.
- It occurs after recovery from malaria (mainly a severe *P. falciparum* malaria) probably due to crossed immunoreactivity.
- The clinical picture is mainly characterized by confusion and behaviour dysfunction, but also higher nervous functions impairment and focal neurological deficits.
- The treatment is controversial since a benign evolution is observed in most cases. In severe cases corticotherapy may be necessary.

Keywords

- Malaria
- Post-malaria neurological syndrome
- Plasmodium

Methods

- Retrospective study of patients with PMNS.
- We searched on our Department's database for cases of neurological deterioration after a malaria recovery.
- The clinical records were consulted.

Results

- From 248 patients hospitalized with malaria in our Department between 2004 and 2016, we found 3 patients with PMNS (see further detail in the table 1).
- All patients had a history of *P. falciparum* malaria with high parasitemia treated with intravenous quinine dihydrochloride and doxycycline.
- Eleven days after the malaria treatment, they began neuropsychiatric symptoms.
- The cerebrospinal fluid showed lymphocytic pleocytosis with hyperproteinorrachia.
- The brain MRI showed abnormalities in two patients.
- An extensive workout to find an infectious cause was performed in all patients.
- In all patients clinical improvement was progressively observed. Nevertheless two of them needed corticotherapy.

	Case 1	Case 2	Case 3
Diagnosis date(mm/yy)	09/2004	01/2016	10/2016
Age (years)	38	45	57
Gender	Male	Male	Male
Malaria characterization			
Acquisition localization	Angola	Ivory Coast	Angola
Plasmodium spp.	P. falciparum	P. falciparum	P. falciparum
Parasitemia (%)	70	25	8
WHO severity criteria	Hyperparasitemia; impaired consciousness; renal impairment.	Hyperparasitemia; impaired consciousness; jaundice; pulmonary oedema; shock.	None
Malaria treatment	Quinine / doxycycline	Quinine / doxycycline	Quinine / doxycycline
Post-malaria neurological syndrome			
Elapsed time since end of malaria treatment (days)	11	11	11
Clinical picture	Headache, behaviour impairment, myoclonic jerks	Fever, behaviour impairment, visual hallucinations and myoclonic jerks	Fever, behaviour impairment, circadian rhythm disruption and myoclonic jerks
Neurological examination	Decreased consciousness, ataxic gait	Decreased consciousness, working memory deficit.	Inattention, mental lentification, working memory deficit, visualconstruction inability
Lumbar puncture			
Cells (/mL)	75 (> mononuclear)	99 (> mononuclear)	159 (> mononuclear)
Proteins (g/L)	1.14	2.09	2.12
Glucose (%, CSF/serum)	60	70	60
Brain MRI (T2/T2FLAIR)	Periventricular, lenticular, thalamic and pons hypersignal	No abnormalities	Bilateral mild caudadolenticulocapsular hypersignal
Electroencephalography	Not available	Global lentification	Severe subcortical diffuse dysfunction
Treatment	Methylprednisolone 1g/day, 3 days	No specific treatment	Methylprednisolone 1g/day, 5 days
Clinical evolution	Gradual improvement Recovery to normal status ten months later	Gradual improvement Mild cognitive dysfunction after six months	Fast improvement Persistence of slight attention deficit.

Table 1 – Demographical and clinical characterization of the three patients with PMNS.

Conclusions

We report 3 cases of PMNS pretending to call the attention and add the knowledge about the clinical manifestations, laboratory and imaging findings as well as treatment and prognosis of this rare and not completely understood entity.