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MEFLOQUINE IN PROGRESSIVE MULTIFOCAL LEUKOENCEPHALOPATHY

P. Nieto Guindo[1], FD. Fernández Ginés[1], E. Molina Cuadrado[1], I. Alférez García[1]
[1]Hospital Torrecárdenas, Pharmacy, Almeria, Spain.

BACKGROUND

Natalizumab increases the risk of progressive multifocal leukoencephalopathy (PML), a potentially lethal brain disorder caused by JC polyomavirus (JCV).
The anti-malarial mefloquine has shown activity against JCV in vitro, yet little evidence supports its use in vivo.

PURPOSE

To assess the efficacy and safety of mefloquine in a case of natalizumab-related PML.

METHODS

51-year-old Caucasian female was admitted to the emergency department in March 2013 complaining of ongoing limb weakness and slurred speech.
Relevant past medical and drug history: **relapsing-remitting multiple sclerosis** diagnosed in 2004, on monthly **natalizumab** since July 2010 (last infusion four days ago).
High dose corticoid therapy plus supporting measures were started immediately. Ten days after admission, **PML infection** was confirmed based on contrast-enhanced magnetic resonance imaging (MRI) findings and **positive CRP for JCV DNA** in cerebrospinal fluid. Patient consent and Institutional Ethics Committee approval were obtained and a trial of **mefloquine** (250mg for 3 days, then 250mg weekly) plus plasmapheresis (to accelerate removal of the antibody) were initiated

RESULTS

Efficacy:

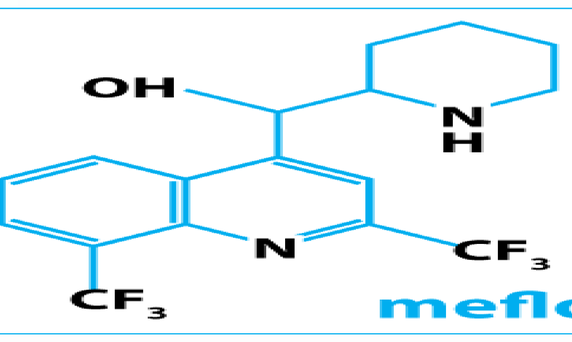
The patient experienced progressive motor and cognitive impairment.

MRI at days 15 and 30 revealed further demyelination with areas extending into the deep white matter and the splenium of corpus callosum.

The patient died at day 55.

Safety:

At day 45, the patient had seizures that were treated with levetiracetam 1g twice daily.



mefloquine

CONCLUSIONS

Despite mefloquine therapy, clinical and radiological progression was observed. Moreover, mefloquine was associated with CNS toxicity.

To date, only routine MRI has somewhat ameliorated the outcome of this neuropathy at the very early stages of infection (pre-symptomatic).

In the lack of first-line evidence, mefloquine has been used with mixed success in the treatment of PML, though larger studies are required to assess its efficacy and safety.