PML in a Person with Multiple Sclerosis: Is Teriflunomide the Felon?

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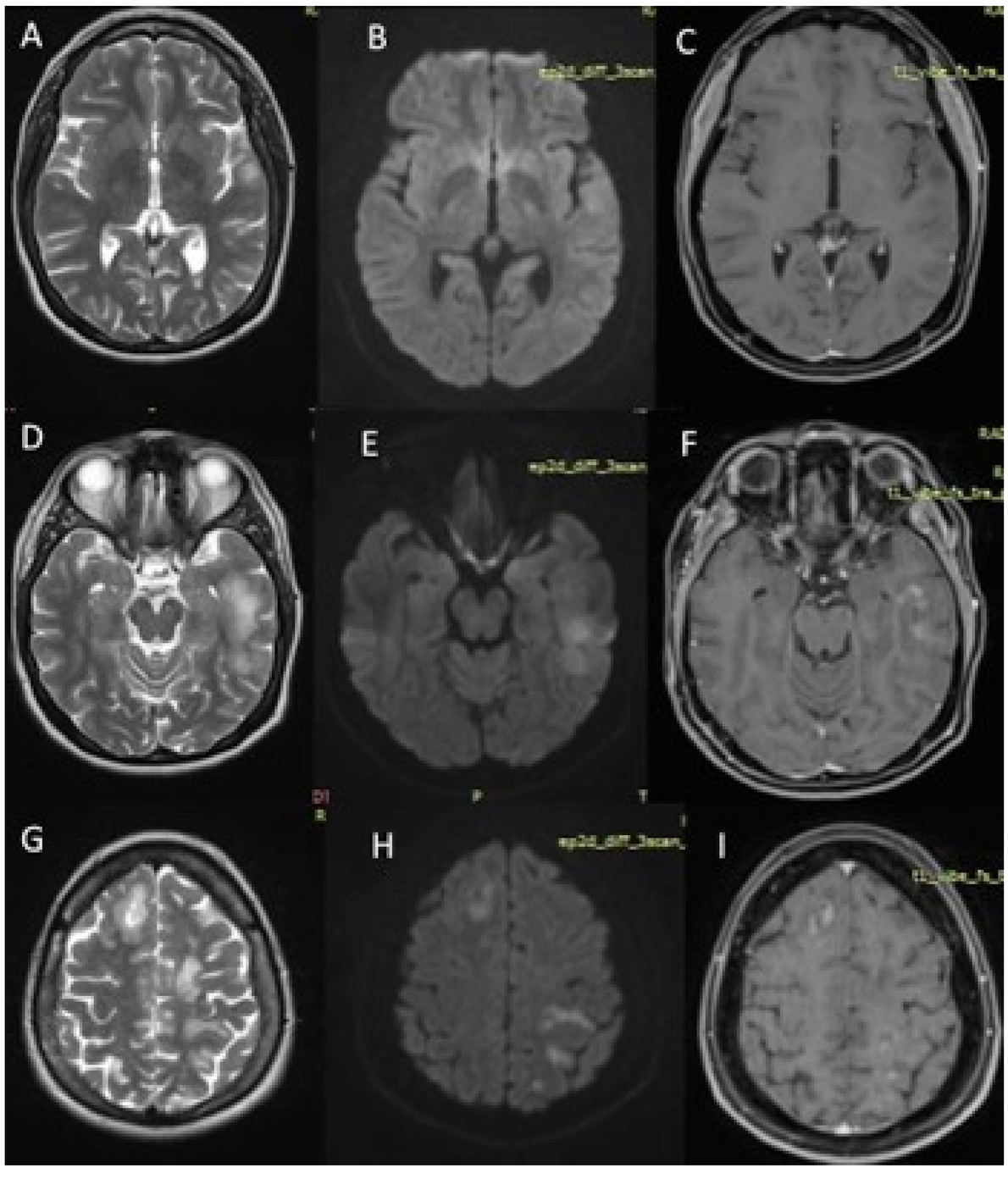
Background. Progressive multifocal leukoencephalopathy (PML) is an opportunistic infection of the central nervous system (CNS), predominantly seen in immunocompromised patients. In multiple sclerosis (MS), higher PML risk is correlated to natalizumab use (Schwab N,2017), although some cases have been described with recently approved oral disease-modifying drugs (Berger JR, 2017). Here, we describe a PML case started during teriflunomide. .

Case Report. On January 28th 2017, a 36-year-old woman with relapsing remitting MS, who had been taking teriflunomide since 7th November 2016, developed acute right-sided weakness and experienced a decline in speech. She was previously treated with natalizumab, discontinued after 33 infusions in May 2016 for JCV antibodies. Brain MRI (30 th January 2017) showed a unilobar area suggestive for PML, while the cerebrospinal fluid showed JCV DNA (11 copies/ml). A rapid and widespread dissemination of lesions was observed in the brain MRI performed in February 2017, complicating the differential diagnosis between PML–immune reconstitution inflammatory syndrome and MS reactivation. Thus, a second lumbar puncture was performed, but JCV DNA was not detected. Afterwards, the clinical condition of the patient improved, and the follow-up MRI of May 2017 was stable.

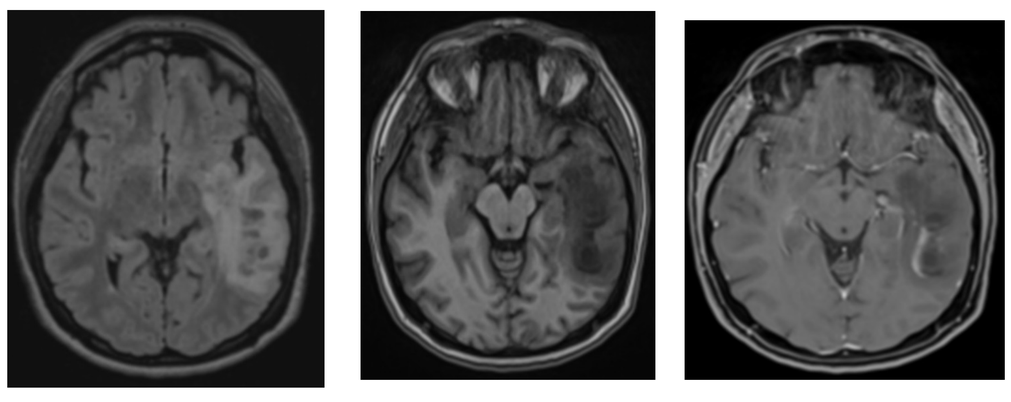
Figure 1: every line show axial T2W, axial DWI and axial T1 W post GD.

First line: onset. Focal T2 hyperintensity in subcortical left temporal region (A), with smooth DWI restriction (B) and without GD enhancement (C).

Second and third line: after 1 month.
Second line: Enlargement of left temporal lesion (D) with edema restriction of DWI (E) and inhomogenous contrast enhancement (F).
Third line: appearence of multiple T2W and DWI hyperintensity (G) with edema and inhomogenous contrast enhancement (H, I).



Extension of the temporal area suspected of PML



Discussion. This case highlights the debate about the current PML surveillance program, the relationship of PML with drugs recently launched and the consecutive use of old and new MS drugs over the time, and the role of inflammation in its evolution.