Full remission of Marburg-like MS after steroids, PLEX and Ocrelizumab treatment: a case report

Alessandro Leone, MD; Salvatore Creta, MD; Nicola De Marco, MD; Francesco Paolo Lombardo MD; Giuseppe Santuccio; ASST Valtellina e Alto Lario, Sondrio e Sondalo, Italy

Objective: To report a case of Marburg-like MS onset with full remission after steroids, PLEX and Ocrelizumab

Subject and methods: We reviewed the medical records of a 26 years-old woman with a free medical history

Clinical onset (October 2022): she developed confusion, progressive weakness, slowdown, episodic agitation and mild aphasia (1 week) →and was admitted in *ER*

Neurological exam: mild anisocoria (RE>LE); drowsiness, severe tetraparesis prevalent at right limbs; severe gait impairment; urinary retention; sensitivity and coordination unreliable → CT scan (Fig 1a) → admission at neurosurgery department suspecting a brain tumor

First MRI *(Fig.1, b-d)***:** many enhancing and oedematous lesions in periventricular and subcallosal regions of both cerebral hemispheres, mainly in the left hemisphere, the largest one of 3.7 cm diameter, and subtentorial not enhancing lesions. Spinal MRI showed a non-active lesion at D11-D12 level. Those findings were *suggestive of Marburg/aggressive variant of multiple sclerosis (MS)*

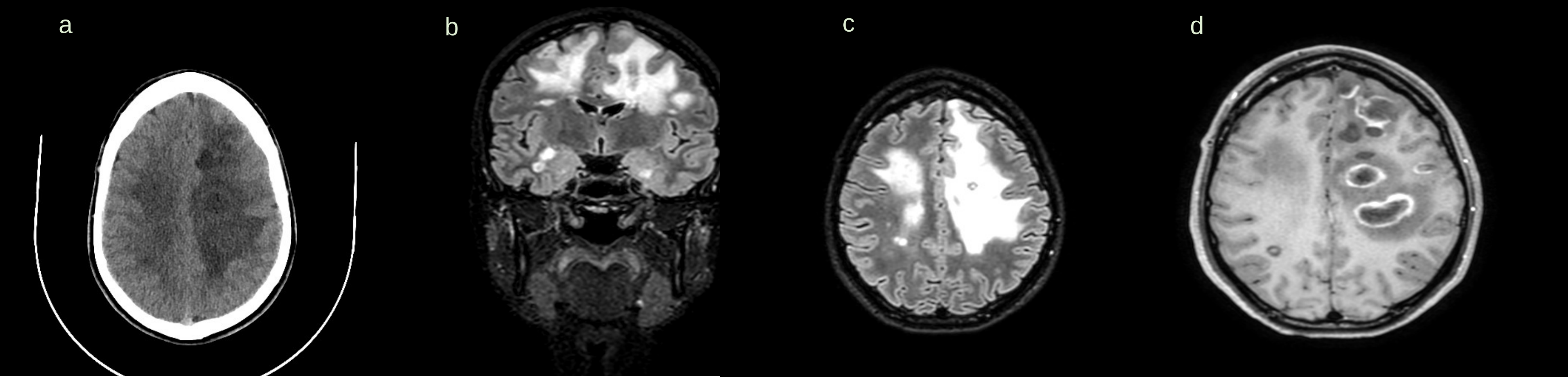

Fig. 1: CT scan (a) and first MRI on admission: coronal flair (b), Axial FLAIR (c), T1, with gadolinium (d)

DIAGNOSTIC WORKUP
PCR Multiplex "Filmarray" examination tested negative for the most common infectious agents. Common blood tests were normal. HIV was excluded. Total body CT scan and echocardiogram excluded extracranial neoplasms and sources of septic brain embolism. Anti-Aquaporin 4, anti-MOG , anti-gangliosides and anti-NMDAr antibodies tested all negative.
Spinal fluid analysis tested positive for many oligoclonal bands, not present in blood

Choices and evolution Suspecting a severe inflammatory process, we started both high-dose steroid therapy (2 g/day i.v. for 6 days) and plasma exchange (six exchange sessions), with a dramatic clinical improvement: she was able to walk with a walker and encephalopathy signs were no more detectable. MRI features also improved (*Fig 2*), with disappearance of contrast enhancement of active lesions, volumetric reduction of larger lesions and progressive clearance of oedema.

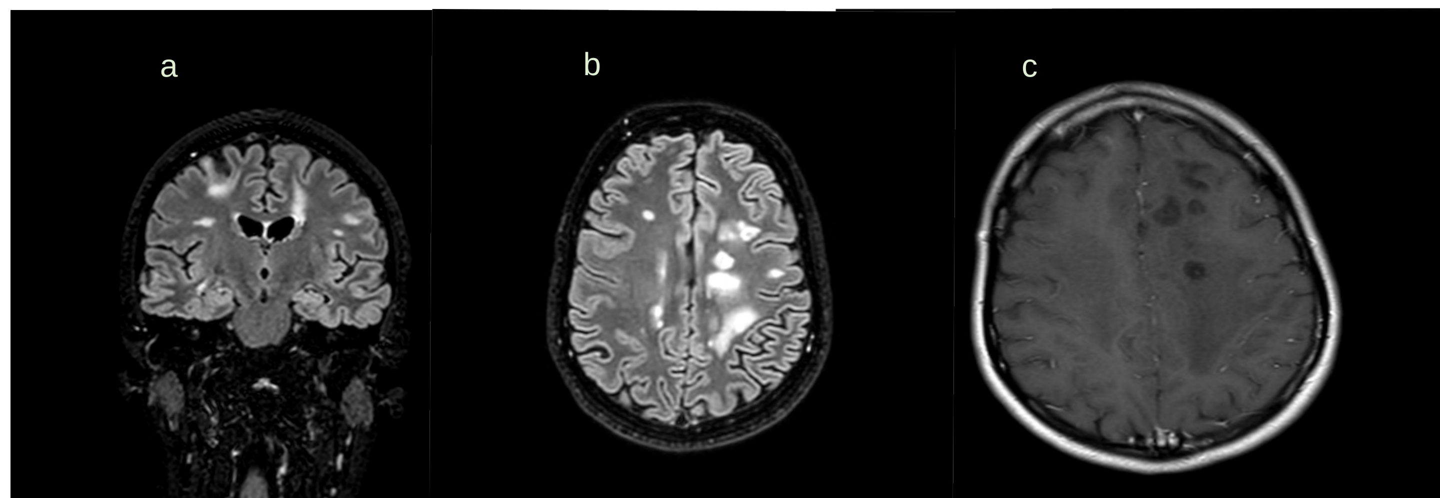

Fig. 2: MRI at Week 3 on treatment: coronal flair (a), Axial FLAIR (b), T1, with gadolinium (c)

Stabilization: At discharge there was only mild right lower limb paresis (EDSS: 2.0), *diagnosis of aggressive MS was made*. Ocrelizumab treatment was started and it is still ongoing at our MS centre after 36 months. At the last visit (Sep 2025, neurological examination was nearly normal: only brisk reflexes (EDSS 1.0); MRI is stable (Fig. 3). Currently, no adverse events occurred.

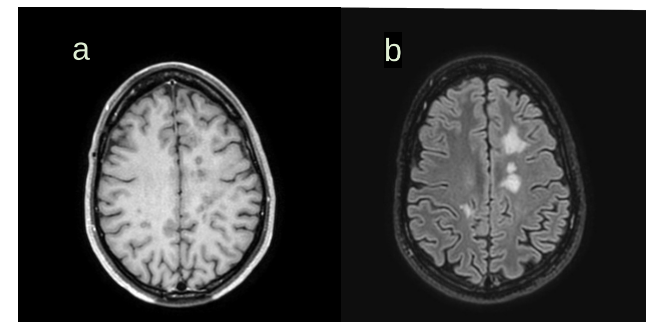

Fig. 3: last MRI (Mar, 2025): T1 with gadolinium (a) and Axial FLAIR (b)

Discussion and conclusions: Our patient developed a rare and highly aggressive onset of Multiple Sclerosis (clinically and radiologically compatible with Marburg variant), with an excellent response to steroids and PLEX therapy. Owing to the high inflammatory activity at onset, a high efficacy treatment was considered mandatory. Alemtuzumab was first considered, but Ocrelizumab was preferred because of a better safety profile.

We believe that a prompt intervention with high-dose steroids and PLEX, quickly followed by Ocrelizumab treatment, has changed the prognosis of our patient that seemed to be very poor at onset

24-28 Ottobre 2025
Padova Congress

55° CONGRESSO
SOCIETÀ ITALIANA
DI NEUROLOGIA