

Double Filtration Plasmapheresis in Guillain-Barré Syndrome: clinical experience and rationale in a complex case.

P. Cucinotta¹, L. Condorelli¹

¹ Intensive Care Unit Lentini Hospital, Siracusa, Italy.

Introduction

Guillain-Barré Syndrome (GBS) is an autoimmune disorder affecting the peripheral nervous system, typically presenting with acute flaccid paralysis, although several variants have been described. Pharmacological treatment alone is not always effective and often requires combination with therapeutic apheresis, which allows the removal of target molecules from the plasma—such as autoantibodies responsible for the patients' clinical presentation.

Methods

A 58-year-old female patient, with a history of hypertension, overweight, previous left thalamic ischemic stroke, and atheromatosis of the supra-aortic trunks, presented to the emergency department with hand paresthesias, dysarthria, headache, and elevated blood pressure.

The following day, she developed left facial asymmetry and progressive dysphagia, followed by cardiac arrest due to ventricular fibrillation, successfully treated with ACLS maneuvers and defibrillation. She was transferred to the ICU, where, upon the first neurological window, she was found to be in a deep coma, with absent brainstem reflexes, anisocoric midriasis, global areflexia, and no spontaneous respiratory drive.

Lumbar puncture revealed albuminocytological dissociation, supporting the diagnosis of Guillain-Barré Syndrome.

During the four-month hospitalization, the patient underwent three 5-day courses of IVIg. Additionally, two cycles of double filtration plasmapheresis (DFPP) were performed, each consisting of four alternate-day sessions, using the Plasmapher® device and EvaFlux® 3A filter (mean plasma flow of 20 mL/min; approximately 2.5–3.0 liters of plasma treated per session).

Results

At eight months from symptom onset and following four months of neurorehabilitation, the patient has recently been decannulated, has regained phonation, and is able to eat orally, though not yet independently. She has recovered sensitivity and motor function in all four limbs, though ambulation is still not possible. A reduction in visual acuity is present, with the cause still under investigation, but no evident cognitive impairment has been observed.

Conclusion

DFPP in Guillain-Barré Syndrome facilitates the removal of circulating autoantibodies and immune mediators responsible for peripheral nerve damage, helping to interrupt the autoimmune process and promote neurological recovery. The choice of DFPP over conventional plasma exchange (PEX) was guided by limited plasma availability and a lower risk of complications, with comparable long-term therapeutic outcomes.