Anti-NMDAR encephalitis
Demonstration of neuroinflammation and the effect of immunotherapy

A 35-year-old man presented with perceptual difficulties and delusions. At presentation, there were orofacial dyskinesias, catatonia, and autonomic instability. Anti-NMDA receptor (NMDAR) antibodies were detected in CSF. Cerebral MRI was unremarkable. At the start of immunotherapy (methylprednisolone and plasmapheresis), [123I]CLINDE-SPECT demonstrated a strongly increased binding to TSPO in cortical and subcortical brain regions similar to the distribution of NMDAR in the brain and different from FDG-PET changes reported in the literature (figure, A). TSPO is present on activated microglia and used as a measure of regional neuroinflammation. After 7 weeks of immunotherapy (figure, B), TSPO binding was close to normal values (figure, C) and the patient was back to work part time as a computer scientist despite mild cognitive problems.

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