Characterization of Late Cognitive Recovery After Cardiac Arrest and Prolonged Coma

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Motivation
- Understanding the extent of potential neurological recovery in post-cardiac arrest patients in prolonged coma following global hypoxic injury remains clinically challenging; cases are rarely reported and recovery is not well characterized.
- In general, functional recovery beyond that achieved in the first 6 months after hypoxic brain injury is expected to be minimal.
- Case studies may ultimately provide insights into the mechanisms and overall capacity for late-recovery in some post-cardiac arrest patients.

Case History
- A 51-year-old female ("IN459") suffered a cardiac arrest after an occipital nerve block injection to treat migraines. Immediate CPR was performed. Initial rhythm was PEA, ROSC after 12 minutes.
- Therapeutic Hypothermia was initiated, with 24hrs of treatment.
- In general, functional recovery beyond that achieved in the first 6 months after hypoxic brain injury is expected to be minimal.
- Case studies may ultimately provide insights into the mechanisms and overall capacity for late-recovery in some post-cardiac arrest patients.

Cognitive and Behavioral Assessments
- The patient was in a Confusional State at the 1st research visit (maximal score). Only 1 point lost on 1st admission for reliable communication.

Summary
- Patient IN459 initially demonstrated several unfavorable prognostic signs in the setting of hypoxic brain injury after cardiac arrest. Only minimal meaningful neurological recovery was expected.
- We provide evidence of her significant and continued recovery throughout our observation period (up to 31 months), ultimately achieving sufficient functional independence to perform activities of daily living.
- Cognitive and behavioral assessments showed marked improvement across tested domains, including: attention, orientation, and operative language use, though short term memory deficits persist. Patient now referred for full neuropsychological evaluation.
- This case demonstrates remarkable ongoing recovery for years following cardiac arrest and prolonged coma. These findings invite broader consideration of the underlying mechanisms of slow neurological recovery following severe hypoxic brain injury.

References and Support

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