

Quadriplegia and severe cognitive deficits after acute carbon monoxide (CO) poisoning - rehabilitation outcomes

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Introduction: Acute carbon monoxide (CO) poisoning occurs after breathing in too much CO and may result in serious neurological manifestations, such as cognitive defects, especially affecting memory and learning, and movement disorders. These disorders are typically related to damage to the cerebral white matter and basal ganglia. **Case Report:** A young 23-year-old man was admitted to emergency department on 28/02/2013 after poisoning with CO, being comatose [GCS: 5/15 (1-1-3)]. He was intubated and admitted to the ICU, on mechanical breathing support. Initial investigations revealed: metabolic acidosis (pH 7.32), CPK: 21000, rhabdomyolysis and acute renal failure. Tracheostomy was performed on 06/03/2013 and removed on 31/03/2013. Brain MRI showed findings consistent with diffuse ischemic leukoencephalopathy and demyelination foci in the corpus callosum. On admission to our Center (01/04/2013), he presented with GCS: 10/15, quadriplegia and left peroneal neuropathy. He had a nasogastric feeding tube and urinary catheter. His initial FIM+FAM score: 58/210. He followed an intensive rehabilitation program including physical therapy, speech therapy, occupational therapy, hydrotherapy, robotic gait training and psychological support. **Results:** During his stay, he remained hemodynamically stable and afebrile. He showed significant improvement of neurological status, swallowing disorders and cognitive deficits (MMSE score: 30/30). On discharge (06/08/2013), he was walking without aids, was independent in all ADLs (FIM+FAM score: 200/210). **Conclusion:** Timely diagnosis, effective treatment and early rehabilitation can improve outcomes for patients with CO poisoning and prevent its complications.