

Posterior periventricular extensive diffusion restriction in a 17 years old boy after cardiopulmonary resuscitation

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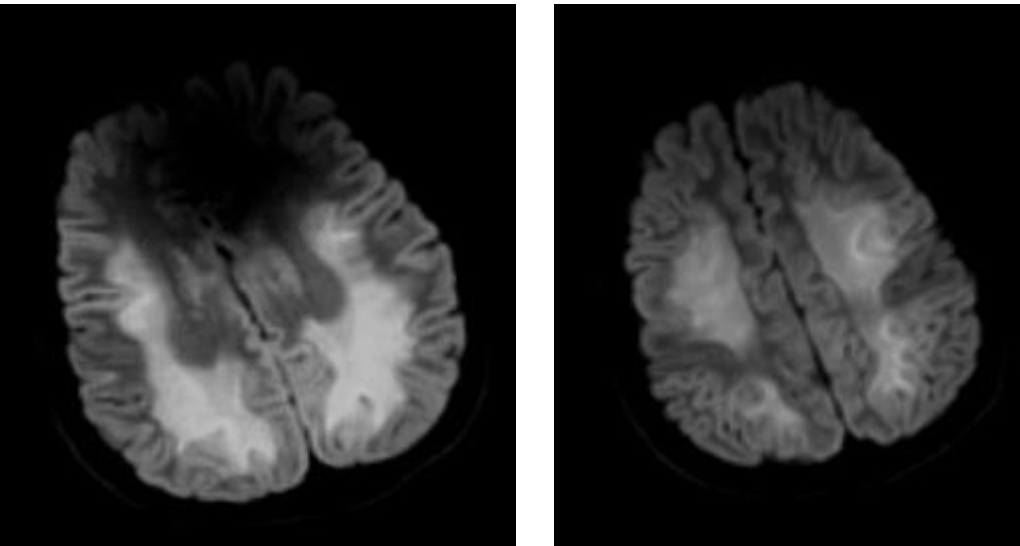
Early after pediatric cardiac arrest, families and care providers struggle with the uncertainty of long-term neurological prognosis. Cardiac arrest characteristics such as location, intra-arrest factors, and postarrest events have been associated with outcome.

A 17 year old boy came to our emergency department because of a gunshot wound. During his follow-up at the intensive care unit, his unconsciousness remained despite the appropriate treatment. Cranial MRI is obtained. Results: Diffusion weighted cranial MRI revealed widespread diffusion restriction at the posterior periventricular areas consistent with postischemic injury. Unfortunately his clinical picture did not improved very much despite the appropriate treatment.

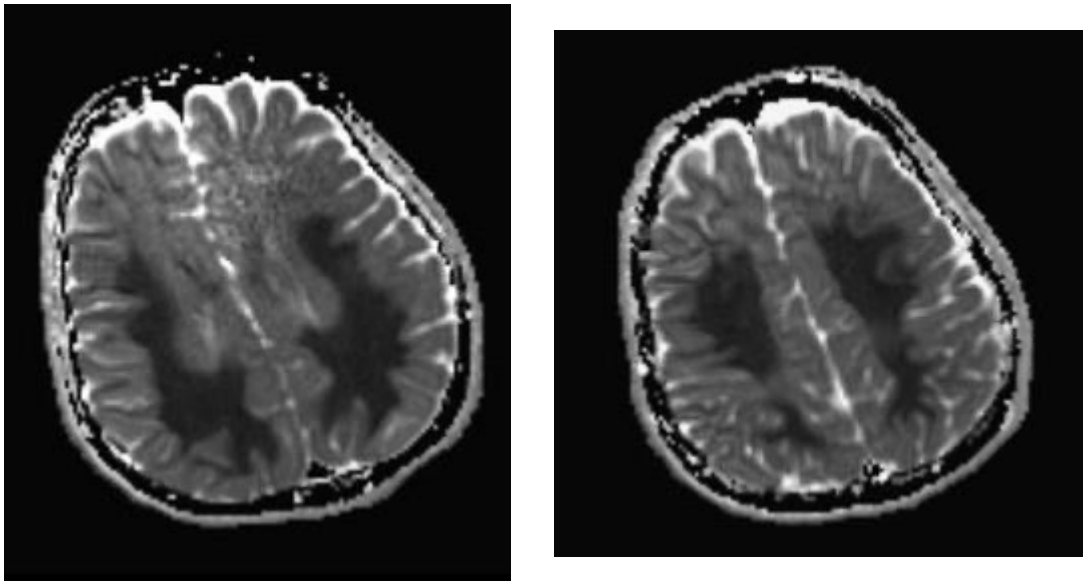
In pediatric patients who remain comatose or have significant neurologic deficits after ardiopulmonary resuscitation, quantitative DWI MRI correlates with neurologic outcome. Methods used for the prediction of long-term neurological prognosis need to be specific enough to identify indivuals with a poor outcome. DWI has emerged as a potential predictor of recovery.

Diffusion weighted images and ADC maps show extensive diffusion restriction especially at posterior parts of both cerebral hemispheres.

Defining the diffusion weighted MRI imaging findings in a child, after cardiopulmonary resuscitation.



Diffusion weighted images.



ADC maps.

1 **Association of MRI Brain Injury With Outcome After Pediatric Out-of-Hospital Cardiac Arrest**, *Matthew P Kirschen et al.* Neurology . 2021 Feb 2;96(5):e719-e731.
2. **Post-anoxic quantitative MRI changes may predict emergence from coma and functional outcomes at discharge**, *Alexandra S Reynolds et al.* Resuscitation . 2017 Aug;117:87-90.
3. **Global and Regional Derangements of Cerebral Blood Flow and Diffusion Magnetic Resonance Imaging after Pediatric Cardiac Arrest**, *Leah C Manchester.* Observational Study J Pediatr . 2016 Feb;169:28-35.