

Anoxic brain injury

Anoxic [brain injury](#) is caused by a complete lack of oxygen to the brain, which results in the [death](#) of brain cells after approximately four minutes of oxygen deprivation.

[Anoxic brain injury](#) represents the main determinant of poor [outcome](#) after [cardiac arrest](#) (CA).

anoxic brain injury, hypothermia for brain death criteria longer observation periods are appropriate and ancillary confirmatory tests may be considered

Large [animal models](#) have been described to investigate new treatments during CA and post-resuscitation phase, but a detailed model that includes extensive [neuromonitoring](#) is lacking.

Before an electrically-induced 10-minute CA and resuscitation, 46 adults [pigs](#) underwent neurosurgery for placement of a multifunctional probe ([intracranial pressure](#) or ICP, [tissue oxygen tension](#) or [PbtO2](#) and cerebral temperature) and a bolt-based technique for the placement and securing of a regional blood flow probe and two sEEG electrodes; two modified cerebral [microdialysis](#) (CMD) probes were also inserted in the [frontal lobes](#) and accidental misplacement was prevented using perforated head support.

42 animals underwent the CA procedure and 41 achieved the return of spontaneous circulation (ROSC). In 4 cases (8.6%) an adverse event took place during preparation, but only in two cases (4.3%), this was related to the neurosurgery. In 6 animals (13.3%) the minor complications that occurred resolved after probe repositioning.

They provided a detailed comprehensive neuromonitoring approach in a large animal model of CA that might help future research ¹⁾.

¹⁾

Annoni F, Peluso L, Hirai LA, Babini G, Khaldi A, Herpain A, Pitisci L, Ferlini L, Garcia B, Taccone FS, Creteur J, Su F. A comprehensive [neuromonitoring](#) approach in a large [animal model](#) of [cardiac arrest](#). *Animal Model Exp Med*. 2022 Feb;5(1):56-60. doi: 10.1002/ame2.12200. Epub 2022 Jan 28. PMID: 35229991.

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