BIOMARKERS DURING CARDIAC ARREST

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Post-cardiac arrest syndrome is a multifaceted clinical condition defined by widespread ischemia–reperfusion injury, neurological deficits, and heart dysfunction following successful resuscitation. A variety of circulating biomarkers have been explored to improve prognostic assessment in patients, yet their relative predictive value is still not fully understood.

This narrative review involved a thorough examination of the PubMed database to locate studies that scrutinize inflammatory, neurological, and cardiac biomarkers in adult populations after experiencing cardiac arrest. The findings suggest that these biomarkers can be useful tools for evaluating outcomes post-cardiac arrest. Notably, inflammatory and neurological biomarkers seem to hold greater prognostic significance compared to cardiac markers, highlighting the crucial impact of systemic inflammation and ischemic brain injury on the pathophysiology of post-cardiac arrest syndrome.

Combining biomarker data with clinical evaluations, neuroimaging results, and electroencephalography can enhance the precision of outcome predictions. However, there is currently no single biomarker with enough discriminative power to independently forecast survival or neurological recovery. Ongoing research is focused on unraveling the mechanistic and prognostic roles of these biomarkers to improve risk stratification after resuscitation and inform future treatment approaches.

Keywords: cardiac arrest, myocardial dysfunction, inflammation, biomarkers.