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Hyun Wook Ryoo

Kyungpook National University Hospital, South-korea

Initial Shockable Rhythm as a Key Predictor of Favorable Outcomes in OHCA Patients without ST Elevation Undergoing PCI

Background

Identification and management of the underlying cause of out-of-hospital cardiac arrest (OHCA) are closely associated with patient outcomes. Among potential etiologies, cardiogenic causes are of particular importance. Although the timing and indications for coronary angiography (CAG) after OHCA have been extensively investigated, clear criteria for its implementation in patients without ST-segment elevation (STE) remain incompletely defined.

Methods

This study analyzed OHCA patients using a citywide, prospectively collected, population-based clinical registry, the Daegu Emergency Medical Services Registry (DEMSRe). Adult OHCA cases recorded in Daegu, Republic of Korea, between January 1, 2018, and December 31, 2022, were screened. We evaluated clinical outcomes among patients who underwent CAG in the absence of STE on the initial electrocardiogram. Favorable outcomes were defined as survival to hospital discharge and good neurological recovery, corresponding to Cerebral Performance Category (CPC) scores of 1 or 2. Factors associated with favorable outcomes were assessed.

Results

Among 6,320 OHCA cases, 371 patients underwent CAG, of whom 258 (69.5%) had no STE on initial electrocardiography. Percutaneous coronary intervention (PCI) was performed in 105 patients (40.7%). An initial shockable rhythm was independently associated with survival to hospital discharge (adjusted odds ratio [aOR] [15.84], 95% confidence interval [CI] [1.95 - 128.88], $p = [0.010]$) and favorable neurological outcome (CPC 1-2; aOR [21.41], 95% CI [2.71 - 169.00], $p = [0.004]$).

Conclusion

In the in-hospital management of OHCA survivors, early CAG in the absence of STE was associated with favorable outcomes in selected patient subgroups, particularly those presenting with an initial shockable rhythm. These findings suggest that clinical characteristics may be important when considering early CAG in OHCA patients without STE because of necessity of PCI.



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Biography

Professor Hyunwook Ryu is a Professor in the Department of Emergency Medicine at Kyungpook National University in South Korea. He is an experienced academic and medical professional with expertise in emergency medicine and acute care. His work encompasses clinical practice, medical education, and academic research, with a commitment to improving the quality and effectiveness of emergency healthcare. As a faculty member at Kyungpook National University, Professor Ryu contributes to the education and training of medical professionals while actively engaging in the advancement of emergency medicine. His professional interests include the management of acute and critically ill patients, evidence-based emergency care, and the development of improved approaches to emergency medical practice. Through his academic and clinical activities, he continues to contribute to the advancement of emergency medicine and to the delivery of high-quality patient care.