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Respiratory collapse of the inferior vena cava on admission reflects clinical features and prognosis in patients with acute heart failure syndrome

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Background: The evaluation of the inferior vena cava (IVC) diameter and respiratory collapse is useful in the management of acute heart failure (HF) syndrome. However, its impact on the prognosis is unknown.

Methods: 74 consecutive patients admitted for acute HF syndrome were analyzed and followed for one year. The measurement of IVC diameter after stabilization of respiratory distress was performed on admission. The IVC collapsibility index (IVC-CI) was calculated as (maximal IVC−minimal IVC)/maximal IVC. According to the initial IVC-CI, the patients were divided into the collapse group (IVC-CI≥0.5: n=34) and the non-collapse group (IVC-CI<0.5: n=40). For one year, the endpoints were mortality due to HF and the combined event of mortality and readmission for HF.

Results: Age, the proportion of male subjects, and left ventricular ejection fraction were comparable between the groups. Initial blood pressure (178±35 mmHg vs. 143±34 mmHg, $p<0.01$) and initial amount of oxygen administration (5.7±5.6 L/min vs. 2.9±4.2 L/min, $p<0.05$) were higher in collapse group than in non-collapse group. The Kaplan-Meier curves showed that survival free of the mortality and combined event for 1 year were higher in collapse group.

Conclusions: Although the degree of pulmonary congestion was severer in collapse group, prognosis of HF was better. This might indicate that the lower central venous pressure and the less fluid accumulation contribute the better prognosis of HF.

Biography

Tomohiro Asahi completed his Graduation from Tokyo Medical and Dental University in 1991 and started training in Internal Medicine and Cardiology at University of the Ryukyus. He has completed his PhD in 2001. He is currently a Chief Cardiologist at Naha City Hospital since 2007 and continues clinical research mainly on heart failure.

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