

# PREVALENCE AND SIGNIFICANCE OF RIGHT-TO-LEFT SHUNT IN ADULT PATIENTS WITH ATRIAL SEPTAL DEFECT

Koji Nakagawa<sup>1</sup>, Teiji Akagi<sup>2</sup>, Yoichi Takaya<sup>1</sup>, Hiroshi Itoh<sup>1</sup>

<sup>1</sup>Department of Cardiovascular Medicine, <sup>2</sup>Cardiac Intensive Care Unit, Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama, Japan

## BACKGROUND

Hemodynamic feature of atrial septal defect (ASD) has been recognized as the degree of LR shunt. On the other hand, ASD patients have a relevant risk for paradoxical embolism due to RL shunt.

## OBJECTIVE

The purpose of this study was to define the incidence of RL shunt in adult patients with ASD, and to evaluate the factors associated with this phenomenon.

## METHOD

We performed bubble study in 85 adult ASD patients (mean age;  $54 \pm 21$  years, mean ASD diameter;  $15.3 \pm 7.4$  mm) before transcatheter closure in our hospital. And we assessed the incidence of RL shunt and the relationship between degree of RL shunt and clinical factors.

## RESULT

Significant RL shunt was observed in 68 (80%) and 82 patients (96%) of all patients at rest and under the valsalva maneuver, respectively. The presence of floppy rim located in the inferior or posterior portion of the defect was highly associated with the degree of RL shunt ( $P < 0.001$ ). Furthermore, the presence of a previous history of systemic thromboembolism was significantly associated with the degree of RL shunt under the valsalva maneuver ( $P < 0.05$ ). On the other hand, neither maximum ASD diameter nor Qp/Qs were associated with the presence and degree of RL shunt.

## CONCLUSION

RL shunt can be confirmed in the majority of adult patients with ASD having significant LR shunt. Our results suggest that there may be a risk for development of paradoxical embolism even in hemodynamically insignificant ASD.