■特別講演

I. 演　題　上部消化管診断のパラダイムシフト
　講演者　河合　　隆　主任教授（消化器内視鏡学）
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II. 演　題　安定狭心症における狭窄病変の機能的評価の重要性
　Importance of functional assessment of coronary artery narrowing in patients with stable angina pectoris
　講演者　近森　大志郎　主任教授（循環器内科学）
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**一般演題：P1-01～P1-18、P2-19～P2-39、P3-40～P3-60**

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**P1-01.**

**Different characteristics of cell volume and intracellular calcium ion concentration dynamics between the hippocampal CA1 and lateral cerebral cortex of male mouse brain slices during exposure to hypotonic stress**

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［Background］ The mechanism of brain edema is complex and remains unclear. Our aim was to investigate the ionic mechanisms of brain tissue edema induced by hypotonic stress. We payed special attention to relationship between edema and $Ca^{2+}$ dynamics.

［Methods］ Hemi-brain slices of mouse were loaded with the fluorescence $Ca^{2+}$ indicator fura-2, and cell volume and $[Ca^{2+}]i$ in the lateral cerebral cortex（LCC）and hippocampal CA1（CA1）region were measured simultaneously during exposure to hypotonic stress using $Ca^{2+}$ insensitive using $Ca^{2+}$ intensive（F360）and $Ca^{2+}$ sensitive fluorescence（F380）, respectively.

［Results］ Brain cell swelling induced by hypotonic stress was followed by cell shrinking, the regulatory volume change that coincided with an increase in $[Ca^{2+}]i$. The degrees of change in cell volume and $[Ca^{2+}]i$ were significantly different between the LCC and CA1. The increase in cell volume and $[Ca^{2+}]i$ in the LCC, but not in the CA1, was decreased by the transient receptor potential channel blockers $LaCl_3$ and $GdCl_3$. The increase in $[Ca^{2+}]i$ in both the LCC and CA1, was significantly decreased by the intracellular $Ca^{2+}$ modulators thapsigargin and xestospongin C. The $K^+$ channel activator isoflurane and $Cl^-$ channel blocker NPPB significantly decreased $[Ca^{2+}]i$ in the LCC.

［Conclusion］ This study demonstrated that, between cells located in the LCC and in the CA1, the characteristics of brain edema induced by hypotonic stress are different. This can be ascribed to the different contribution of volume sensitive G-Protein coupled receptor and stretch sensitive $Ca^{2+}$ channels.