

EFFECT OF PHOSPHODIESTERASE III INHIBITOR (OLPRINONE) ON THORACIC DUCT LYMPH FLOW IN ANESTHETIZED SHEEP WITH EXPERIMENTALLY INDUCED HEART FAILURE BY ENDOTHELIN-1

**M. Tomoyasu, M. Onizuka, M. Inagaki, Y. Sato, T. Yamamoto,
S. Ishikawa, T. Mitsui**

Department of Surgery, Institute of Clinical Medicine, University of Tsukuba, Japan

ABSTRACT

We investigated the short-term effects of a phosphodiesterase III Inhibitor (Olprinone) on hemodynamics and thoracic duct lymph flow in anesthetized open-chest sheep with heart failure induced by endothelin-1 (cardiogenic shock). Ultrasound transit-time flow probes were attached to the thoracic duct, the ascending aorta and the renal artery. Arterial, pulmonary and central venous pressures were monitored. Endothelin-1 was infused intravenously at a dosage that reduced cardiac output to 50% or more of baseline (n=11). The effects of Olprinone were examined (n=5) by intravenous infusion after endothelin-1 administration. Other sheep (n=6) were used as controls. Olprinone significantly increased cardiac output that had been decreased by endothelin-1 and further increased thoracic duct flow that had been increased by endothelin-1. Increased arterial and pulmonary pressures induced by endothelin-1 administration were rapidly decreased by Olprinone. Renal arterial flow and central venous pressure were, however, unchanged by Olprinone. Overall, Olprinone acutely improved experimental cardiogenic shock (heart failure) induced by endothelin-1, and maintained thoracic duct lymph flow at a high level after endothelin-1 administration.