Video Session

Safety and efficacy of hemoglobin-vesicles and albumin-hemes

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We have developed several kinds of oxygen infusions for more than 20 years as a collaboration research group of Keio U. and Waseda U. At least, two candidates have been selected in view points of safety, efficacy, and cost performances, which are hemoglobin-vesicles and albumin-hemes. Our recent fruits and topics will be comprehensively edited and presented with an enough discussion time.

A. Hemoglobin(Hb)-Vesicles

Outline of Hb purification and preparation of Hb-vesicles, especially utilization of CO and molecular assembling techniques / Specification of Hb-vesicles including long-term preservation tests / Blood compatibility studies such as platelet and complement activation / 90%-Exchange transfusion studies/Hemorrhagic shock and resuscitation studies / Microvascular responses of skin, liver, lung to hemodilution studies compared with acellular modified Hbs / Influence on reticuloendothelial systems / Daily repeated infusion studies/Modification of clinical laboratory tests / Construction of metHb reduction systems and non-phospholipid vesicles

B. Albumin-Hemes

Establishment of manufacturing process of recombinant human serum albumin (rHSA) / Crystal structure and molecular dynamics of rHSA by ligand association / Preparation of albumin-hemes and preservation stability / Variable oxygen binding properties by the incorporated heme structure/Synthesis and characteristics of albumin-heme dimmers / Compatibility with blood cell components / No vasoconstriction and hypertension side-effects/Exchange transfusion studies/Hemorrhagic shock and resuscitation studies / Oxygenation of hypoxic region in solid tumor.