

Investigation of cerebrovascular effects and cerebral tissue oxygen saturation in diabetic patients during cardiovascular surgery with cardiopulmonary bypass

In diabetes, the whole vasculature is in a constrictive state. The decreased tissue perfusion is manifested in decreased cerebral tissue oxygen saturation. Therefore, the saturation gap between the central venous oxygen saturation and the cerebral tissue saturation widened, and this gap is no more predictable. We aim to study the effect of pH on cerebral circulation in diabetic patients during cardiovascular surgery with cardiopulmonary bypass. Our hypothesis is that maintenance of normal pH (pH-stat) is more advantageous than lower CO₂ and higher pH resulting from hypothermia (alpha-stat). 40 patients are intended to be involved in the study. Cerebral circulation will be measured with transcranial Doppler and regional continuous tissue oxygen saturation monitor. Our goal is to start with the measurements in November-December.