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Titel des Beitrags: LIFEBRIDGE B2T—a new portable cardiopulmonary bypass system.
Abstract:
The LIFEBRIDGE B2T is a new portable cardiopulmonary bypass (CPB) system designed for temporary circulatory support. The LIFEBRIDGE B2T consists of a disposable patient unit with a CPB circuit, a control, and a base unit. The system weighs 20 kg. We used the LIFEBRIDGE B2T in four patients for circulatory support in beating heart coronary artery bypass graft for complete revascularization. The LIFEBRIDGE B2T was connected via femoral cannulation. Concentrations of free hemoglobin (fHb), interleukin (IL)-6, and -8 were measured. For venous blood drainage, 22-24 Fr cannulae and for arterial cannulation, 16-20 Fr cannulae were used. Average extracorporeal circulation (ECC) time was 61 +/- 18 minutes. During circulatory support, the system delivered an arterial blood flow between 3.1 and 4.1 L/min. The negative pressure at the venous drainage was between -79 and -45 mm Hg. During circulatory support, fHb concentration increased from 5.8 +/- 1.7 mg/dL to a maximum of 10.2 +/- 6.2 mg/dL. Also, IL-6 and -8 increased from 2.1 +/- 0.06 to 503.3 +/- 400.7 U/L and 5.9 +/- 0.9 to 66.5 +/- 46.8 U/L, respectively. The LIFEBRIDGE B2T is a new portable and safe circulatory support system. Connected via femoral cannulation, the system provides adequate arterial blood flow and an acceptable negative pressure at the venous cannula. The fHb concentration showed only a moderate increase during ECC.