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主題：

Hemodynamic Management in Cardiovascular Surgery – Comprehensive solution of Tissue Oximetry and HPI

摘要：

Estimating the cardiac output constitutes an essential part of the hemodynamic monitoring during cardiac surgery as it provides the basis for therapeutic interventions to ensure adequate tissue perfusion. For that purpose, a pulmonary artery catheter (PAC) using the thermodilution method has been considered a 'clinical standard' along with its attendant limitations. The invasive nature of the PAC carries the risk of various complications, including damage to the cardiac valves and pulmonary artery rupture, and the clinical value of the data obtained from the PAC remains a matter of heated debate.

The FloTrac/EV1000™ system (Edwards Lifesciences, Irvine, CA, USA) is a less invasive method of acquiring continuous data on the cardiac output and this system uses pulse contour analysis. It requires only standard radial artery catheterization and it empirically correlates the standard deviation (SD) of the pulse pressure to the stroke volume on the basis of the patient's characteristics after automatic adjustment for actual vascular compliance and thus, it does not require external calibration.

The cardiac output measured by the FloTrac/EV1000™ system was reliable even in patients with a decreased LVEF and in a low cardiac output status during OPCAB. Acceptable agreement was also noted during the period of heart displacement and grafting of the obtuse marginalis branch. Other Cardiovascular procedure may be feasible by using uncalibrated pulse contour cardiac output to monitor patient haemodynamic status and optimize patient preload and contractility.