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Abstracttitel: A Good Indicator for Systemic Vascular Resistance Using Peripheral to Central Blood
Oxygen Saturation

Background: Several modalities are used for hemodynamic monitoring. Some concern blood flow characteristics, while others evaluate tissue oxygenation. Systemic vascular resistance is usually measured from other variables, which may be invasive and expensive. We have proposed a new easy, noninvasive, and inexpensive method for evaluating vascular resistance. Method: Twenty patients, candidate for coronary artery bypass graft were selected. Arterial blood, peripheral and central venous blood samples were taken before and during pump bypass. Blood oxygen saturations were used to calculate an index. This index compares peripheral blood circulation to central flow. Correlation between measured systemic vascular resistance and mentioned index were evaluated before and on pump bypass. Results: There is a significant correlation ($r=0.87$; $p<0.001$) between measured systemic vascular resistance and mentioned index before and during pump bypass. The linear regression showed that systemic vascular resistance (SVR) could be calculated as $SVR = 0.6$ (95% CI: 0.4-0.8) + $0.5 * \text{Index}$ (95% CI: 0.3-0.7). Conclusion: The mentioned index, which uses peripheral and central venous blood oxygen saturation, is easy, inexpensive and accurate indicator for systemic vascular resistance. It has a significant correlation with vascular resistance and may have prognostic and therapeutic applications.