Category :**Cardiovascular: Monitoring**

A17 - *Stroke volume variation (SVV): difference of information derived from fingerplethysmography („clearsight"), uncalibrated pulse contour analysis („flotrac") and calibrated pulse contour analysis (PiCCO))*

J Mangold [1] ; U Mayr [2] ; W Huber [2] ; T Lahmer [2]

[1]Klinikum Rechts der Isar, II. Med. Klinik, Munich, Germany, [2]Klinikum Rechts der Isar, Munich, Germany

Introduction:

Values of SVV higher than 13% in some cases predict fluid responsiveness. SVV is derived from pulse contour analysis of arterial blood pressure curve. The uncalibrated „Flotrac"-device (Edward Lifesciences) estimates SV (and so SVV) with an unpublished formula. In contrast to the PiCCO device (Pulsion), where SV (and so SVV) is derived from pulse contour analysis calibrated to individual patient. But also with fingerplethysmographically („Clearsight", Edward Lifesciences) derived blood pressure signals SVV can be obtained (using uncalibrated pulse contour analysis).

Methods:

We compared 256 simultaneously derived measurements of SVV from Clearsight (SVV_CS), Flotrac (SVV_FT) and PiCCO (SVV_PiCCO) as gold-standard, directly after calibration of the PiCCO-device in 32 ICU patients. Primary endpoint: Concordance of the measurements within the categories „<9%", „9-13%" and „>13%". Statistics: Microsoft Excel, IBM SPSS 25

Results:

n=32 (m=22, f=10; age 69±13), APACHE II 29±6, vasopressors 175/256. SVV_PiCCO could not be derived in 22/256 (8,8%) pairs of measurement, whereas Clearsight- and Flotrac-signals always could be obtained. SVV_PiCCO was higher (13±7.6%) than SVV_FT (9±4.9%) and SVV_CS (10±5.4%). Classification within the categories „<9%", „9-13%" and „>13%" for SVV_FT and SVV_PiCCO agreed in 118 of 234 (50,43%) measurements and for SVV_CS and SVV_PiCCO in 116 of 234 (49.57%) measurements. When anticipating fluid responsiveness at a cut-off of 13%, SVV_FT predicted fluid-responsiveness correctly in 38 of 113 cases (33.6%) and false positive in 3 of 113 cases (2.7%). SVV_CS predicted fluid-responsiveness correctly in 53 of 113 cases (46.9%) and false positive in 17 of 113 cases (15%).

Conclusion:

SVV-PiCCO was higher than SVV_FT or SVV_CS. There was only about 50% chance that SVV_FT, respectively SVV_CS values fell in the same categories as SVV_PiCCO. For the relevant category of SVV_PiCCO > 13 there was even lower concordance, escpecially for SVV_FT.