

Introduction

To get accurate absolute volumes, Conduct NT uses a reference method like thermodilution to calculate Alpha and a saline ejection to calculate Vc to calculate parallel conductance.

To achieve reliable thermodilution stroke volumes, at least 5-dilution measurement should be performed.

However, it is also possible to calibrate the volume using ESV and EDV via Echo, keeping in mind that the accuracy of the calculated volumes and ejection fraction are then dependent on the accuracy of the Echo measurements.

When absolute volume measurements are required one should start with the Vc hypertonic saline measurements and check whether the automated software has calculated correctly the Vc. The procedure should be performed during regular heart rate. The stabilization variables can in general best be excluded.

It is advisable to repeat hypertonic saline measurements after the thermodilution cardiac output measurements.

How to calculate Alpha from Echo?

In the current method we use a reference method to measure the Cardiac Output. With this Cardiac Output you can recalculate (using Alpha) the measured Cardiac Output of the conductance method to this value.

This can also be done with the stroke volume. Therefore we can use ESV and EDV from ECHO.

Write down the next values:

- EDVecho = EDV value from ECHO
- ESVecho = ESV value from ECHO
- EDVconduct = EDV measured by Conduct NT
- ESVconduct = ESV measured by Conduct NT

Now we have to calculate manually:

$$SVecho = EDVecho - ESVecho$$

$$SVconduct = EDVconduct - ESVconduct$$

$$Alpha = \frac{SVconductnt}{SVecho}$$

How to calculate Vc?

In the current method we use saline injection to calculate the Vc. It is also possible to use ESV or EDV from the ECHO to calculate Vc.

We need the same Echo values as used by calculating Alpha.

Now we have to calculate manually:

$$Vc = EDVconduct - Alpha * EDVecho$$

or

$$Vc = ESVconduct - Alpha * ESVecho$$

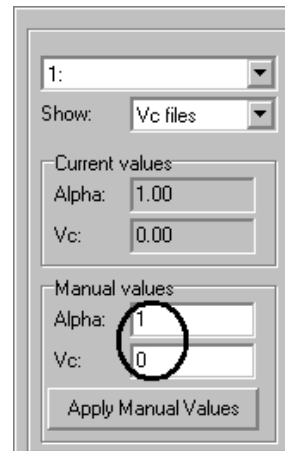
How enter in Alpha and Vc manually?

Select the mode 'volume calibration'.

Enter the manually calculated values for Alpha and Vc in 'Manual Values' (see circle).

Press 'Apply Manual Values'. The Manual entered values will be copied to 'Current values'.

All the files set to datafile and in the same number of dataset will be calibrated using the manual values for Alpha and Vc.



Note: If the PV-loops and total volume are displayed in red, the volumes are not calibrated. If the PV-loops and total volume are displayed in yellow, the volumes are calibrated using Alpha and Vc in 'Current values'.



If you have any questions or comments, please contact us
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