

Poster Session 35 - Blood Pressure Monitoring II

PS35/TUE/36 - An evaluation of a new system for non-invasive measurement of central aortic systolic pressure

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Objectives: To evaluate a new method of non invasive estimation of central aortic systolic pressure (CASP) using A- PULSE by comparing it with a more established method (SphygmoCor)

Methods: SphygmoCor device has been used in deriving CASP worldwide and currently considered as the "gold" standard. A database obtained from 861 patients previously studied with SphygmoCor device was studied. All data came from a wide spectrum of individuals (normal volunteers, newly diagnosed diabetics or impaired glucose tolerance, perimenopausal women) measured several times by SphygmoCor device to get their CASPs. A total of 4418 raw data (out of 7000) obtained by SphygmoCor were randomly selected from the database and transferred into A-PULSE system to derive the CASP.

Results: A-PULSE derived CASPs were well matched with SphygmoCor derived CASPs with a mean of 1.2 mmHg and a standard deviation of 1.2 mmHg. The slope of regression line is 0.983 and the correlation coefficient is 0.996 (Fig. 1).

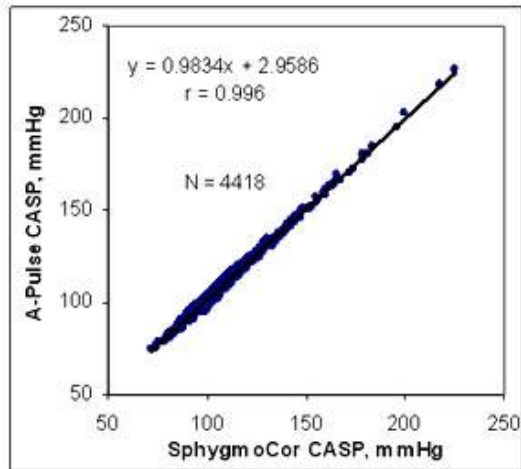


Fig.1 Linear regression of A-Pulse derived CASP and SphygmoCor derived CASP

[Figure 1]

It means that A-PULSE derived CASP has very strong correlation and changes linearly and equally with SphygmoCor derived CASP. The Bland-Altman plot shows that 100% differences of A-PULSE derived CASP and SphygmoCor derived CASP are within 5 mmHg.

Conclusion: A-PULSE derived CASP is comparable to SphygmoCor derived CASP and therefore, can be used to derive central pressure in clinical studies.