

Appendix 1 aPWV measurement

aPWV measurement via carotid-femoral applanation tonometry

Tonometer-derived carotid-femoral pulse wave velocity (central PWV) was measured using SphygmoCor AtCor Medical, Australia. PWV was calculated utilizing the formula:

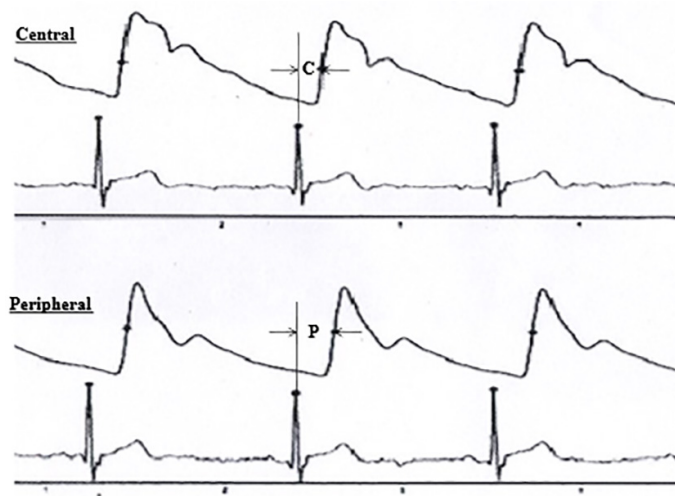
$$\text{PWV (m/sec)} = \frac{\text{Distance (m)}}{\Delta T \text{ (sec)}}$$

Distance = Carotid to Sternal Notch + Sternal Notch to Cuff

Time (ΔT) = Difference of time delay between carotid and femoral arteries

aPWV measurement via invasive coronary catheterization

A pigtail catheter was pulled back from the left ventricle (LV) to the ascending aorta above the aortic valve during invasive angiography. Catheter was flushed, and a central aortic pressure wave was recorded along with the ECG (at paper speed 100). The catheter was then pulled back 30 cm (flushed again), and a distal (peripheral) pressure wave was recorded at the same speed. From the peak of the QRS complex, time (C) to central pressure wave was measured. Next, time from peak QRS to peripheral (P) wave was measured. All measurements were made in the same location (e.g., measured at the foot of the wave). Delta t (seconds) = (P minus C). To account for sinus arrhythmia, measure 3-5 different wave distances and average the deltas. Aortic PWV was calculated by using the formula:



$$\Delta t = (P - C)$$

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$$\text{Aortic PWV (m/s)} = 0.3 \text{ m}/(\Delta t)$$