Doppler Assessment:
A Practical Guide

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“Empowering patients through a unique collaboration with industry dedicated to lower limb conditions”
Examination of the arterial patient
Clinical features of the ischaemic foot
Doppler Assessment
Doppler ABPI Measurements
Other useful tests
Pole Test
Doppler Waveforms and Sounds

Waveforms provide extra information to confirm clinical findings and ABPI’s

Triphasic Waveform - Normal

Biphasic Waveform – Normal with age
Doppler Waveforms and Sounds

Monophasic Waveform - Abnormal
Toe Pressures

Doppler or Photoplethysmography (PPG)

- Toe/brachial pressure > 0.7 = normal
- Rest pain usually present in patients with index < 0.15
- Absolute pressure in the toes of 20-30mmHg is usually associated with rest pain
Problems with measuring ABPI using Doppler
Advantages of Auto ABPI
Pulse Volume Recordings
Grade A: Normal
Sharp systolic peak with prominent dicrotic notch

Grade B: Mildly Abnormal
Sharp peak, absent dicrotic notch; downslope is bowed away from baseline

Grade C: Moderately Abnormal
Flattened systolic peak, upslope and downslope time decreased and nearly equal, absent dicrotic notch.

Grade D: Severely Abnormal
Low amplitude or absent pulse wave with equal upslope and downslope time
Recent Study (Lewis et al, 2014)

Examples of normal & mild disease
A) Both ABI and PVR waveforms indicate normal lower limb arterial supply

B) Left ABI and PVR waveform indicate normal lower limb arterial supply and right ABI and PVR waveform indicate mild PAD

Examples of moderate and severe disease
C) Both ABI and PVR waveforms indicate moderate PAD

D) Left ABI and PVR waveform indicate normal lower limb arterial supply and right ABI and PVR waveform indicate severe PAD
Recent Study

(Davies et al, 2014)

Doppler:
L = 1.32
R = 1.32

Normal Pulse Volume Recording
Analysis of pulse volume waveform?

RESULT: Moderate-severe PAD. Referred to vascular surgeon. Subsequently underwent successful angioplasty.
Thank You
Any Questions