SUMMARY

The ankle brachial index (ABI) is a ratio of Doppler recorded systolic blood pressure in the arteries supplying the legs and central aortic pressure (approximated by measuring the blood pressure in the arm). It is used to assess patients for peripheral arterial disease (PAD) as a fall in blood pressure in an artery at the ankle relative to the central blood pressure would suggest a stenosis in the arterial conduits somewhere in between the aorta and the ankle. This condition is usually asymptomatic and associated with increased risk of cardiovascular morbidity and mortality.

As a result of the relatively easy access to peripheral circulation, ABI can readily be measured to identify asymptomatic individuals thus allowing institution of preventive measures against serious brain and heart clinical atherosclerotic disease. However, despite this clinical usefulness of ABI, it is often not considered for use during cardiovascular assessment of patients.

The risk factors for low ABI are the same as the traditional risk factors for cardiovascular diseases (advancing age, hypertension and diabetes among others.) and patients with these risk factors are daily encountered in the general out-patients’ clinic (GOPC) of Olabisi Onabanjo University Teaching hospital (OOUTH). It is desirable to incorporate the measurement of their ABI with the aim of determining the pattern of ABI and the prevalence of PAD. The specific objectives were to establish their baseline ABI, determine the prevalence of PAD and the risk factors for low ABI among the sampled population.

To achieve these, a cross sectional study of 400 subjects selected by systematic random sampling and aged 50 years and above was carried out at the GOPC of OOUTH, Sagamu. In the method
used, their socio-demographic data, cardiovascular risk factors (hypertension, diabetes, cigarette smoking, body mass index and blood cholesterol level) and ABI were assessed and collated with the aid of a questionnaire. The ABI values of 0.91-1.3, ≤ 0.9 and >1.3 were taken as normal, low and high ABI respectively.

The results were as follows: The age range of the participants was 50 – 86 years with a mean of 62.5 ± 9.29 years. There were one hundred and forty four (36.0%) males and two hundred and fifty six (64.0%) females giving a male to female ratio of 1:1.8.

Two hundred and eighty eight (72.0%) of the participants had normal ABI, ninety nine (24.8%) had low ABI and thirteen (3.3%) had high ABI. From these, the prevalence of PAD was 24.8% with ninety seven (24.3%) having mild PAD and two (0.5%) having moderate PAD.

The mean age of the participants for low ABI was 70.32 while the mean age for high and normal ABI was 72.00 and 62.51 respectively. Also the prevalence of low ABI increased sharply from 4.9% between 50-59 years to 25.3% and 58.7% between 60-69 and ≥70 respectively without significant gender differences.

The largely asymptomatic nature of PAD was shown by the finding of intermittent claudication among only 6.3% of the entire participants and in just 17.2% of those with low ABI. Of the cardiovascular risk factors assessed, the prevalence of diabetes mellitus and hypertension was higher and had statistically significant relationship with low ABI.

In conclusion, the prevalence of PAD as diagnosed by ABI was 24.8%. The age of the participants was a significant risk factor for low ABI as shown by the sharp rise in prevalence after the 5th decade of life. Additional significant risk factors for low ABI were diabetes mellitus and hypertension. Also of note was the low prevalence of intermittent claudication among the
participants with low ABI highlighting its limited use in the screening for PAD. The clinical implication of these findings is that beyond the 5th decade of life and among patients with diabetes mellitus and hypertension, screening for PAD using ABI should be included as part of their clinical evaluation and primary prevention strategy. Reliance on the presence of intermittent claudication even among those at risk of PAD will result in underestimating the true burden of PAD.