Accuracy Evaluation of Non-Invasive Technology to Analyze Lower Extremity Arteries and Blood Flow

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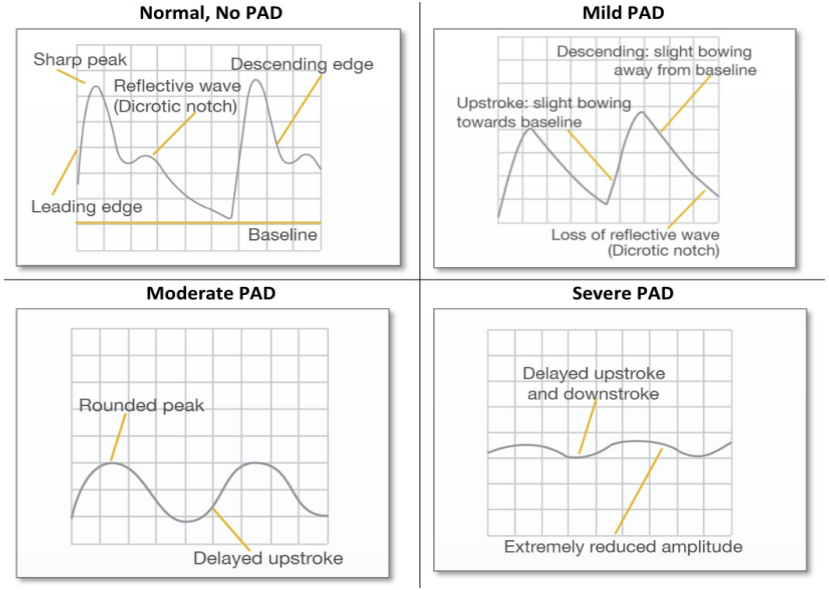
Purpose

Peripheral artery disease (PAD), continues to be under-diagnosed and thereby untreated early in its progression, leading to unnecessary healthcare costs, and more crucially, unnecessary amputations. The early identification of this chronic condition enables patients to have access to a wider range of lower-cost and lower-risk therapies that can improve patient outcomes and save lives. The most traditional point-of-care testing requires the administration of a 15 to 30 minute test, specialized testing equipment, and time in already stretched clinical workflows. The purpose of this investigation was to analyze the efficiency of a new tool titled PADnet Xpress (Biomedix, Saint Paul, Minnesota) in diagnosing PAD.

Materials and Methods

Sixty-one MIMIT Health patients with typical and atypical PAD symptoms were screened for PAD using PADnet Xpress to examine the efficacy of this tool. Fifty-five were Caucasian, 3 were Asian, and 3 were Latino. Fourty-four of those tested were female, 17 male, and the median age of residents tested was 82.



Pulse Volume Recordings and Morphology for Various Stages of PAD

PADnet Xpress combines the clinical value of Ankle Brachial Indexes (ABI) with Pulse Volume Recordings (PVR). Both are calculated by placing a blood pressure cuff at the location where the provider wants to evaluate blood flow. The results are captured in a tracing which documents the morphology and amplitude of the recorded waveforms. Different stages of PAD are indicated by different waveforms that are displayed above.

Results

While only 5 of the 61 participants had a previous PAD diagnosis in their chart, 47 were identified as having PAD as a result of this initiative. Of the abnormal studies, 81% had mild disease, 15% had moderate disease, and 4% had severe PAD. Of the 56 patients without a previous PAD diagnosis in their chart, 77% had an abnormal PAD test.

Conclusion

This investigation showcased the efficacy of using PADnet Xpress as a diagnostic tool for identifying PAD within non-symptomatic patients. Its low cost, time saving approach to diagnosing PAD has the potential to be adopted in primary care practices within regular check-ups. This innovative approach enables community-based collaborative care to optimize patient outcomes.

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