Editorial

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Optimizing the Definition of Critical Limb Ischemia: Cause and Effect or a Syndrome?

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Editorial

Critical Limb Ischemia (CLI) is an end-stage atherosclerotic disease of the lower extremities [1]. CLI has a deleterious impact on patient health and is associated with a high risk of amputation and cardiovascular death [2]. Patients with CLI have a significant compromise in quality of life when compared to patients with non-CLI peripheral arterial disease [3]. CLI patients also frequently have coronary artery disease, carotid disease, and atherosclerotic aortic disease, and it is associated with higher morbidity and mortality [2]. Thus, an important component of the care of patients with CLI is secondary prevention of atherosclerotic events.

Another major management goal of CLI includes what might be referred to as 'limb health'-that is, achieving a functional, painless limb free of wounds. The pursuit of limb health often requires revascularization, meticulous wound care, infection control, and diabetic management. The benefits of successful limb salvage are rarely disputed but are difficult to achieve and require a skilled multidisciplinary approach. The challenges include lack of accurate clinical predictors for amputation and the patient population itself, often debilitated with comorbidities and non-ambulatory.

Fortunately, the therapy for limb salvage is improving: interest in multidisciplinary programs, new anti-atherothrombotic medications, and increased operator experience for complex revascularization [4]. Likely, an increased detection of CLI as a health problem has improved the outcomes. To maximize the detection of this disease, it is worthwhile to revisit the definition of CLI.

The first formal definition of CLI was proposed by Fontaine et al in 1954, as having the rest pain or tissue loss due to severe peripheral arterial disease. Later Society of Vascular Surgery/ International Society of Cardiovascular Surgery published a classification known as the Rutherford classification; adding objective hemodynamic parameters to the clinical presentation [5]. More recently, the Society of Vascular Surgery proposed a new classification, i.e., WIfI (Wound, Ischemia, and Foot infection). The purpose of this classification scheme may not have been to redefine CLI [6]. However, the concept of considering perfusion, wound extent, and the presence and severity of infection for every wounded limb has interesting clinical implications.

In an attempt to improve patient care of CLI, it might be proposed to better detect this disease state which requires better definition of CLI. That is; 1) Is CLI a clearly ischemic ulcer in the setting of an arbitrary hemodynamic cutoff? Or, 2) Is CLI a syndrome: non-healing limb wound of any cause with associated obstructive PAD that is contributing to non-healing?

Should the general management of non-healing foot wounds be similar regardless of etiology? It could be proposed that to achieve the optimal limb health outcomes, providers should seed to detect ischemia and optimize perfusion for all non-healing limb wounds, even if the original etiology was thought to be diabetic or neuropathic, for example.

Finally, should CLI patients with ischemic rest pain be considered similarly to CLI patients with tissue loss? The two subpopulations seem quite different in their risk of amputation as well as their health care needs. Perhaps, patients with rest pain should be considered separately from a CLI population and share treatment goals similar to patients with severe claudication. In summary, the under diagnosis is unacceptable. Granted, a contemporary definition of 'CLI' is in the details, but it seems that CLI ultimately is a syndrome of tissue loss in the presence of objective PAD.

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