Chronic venous disease (CVD) is a common problem worldwide and is primarily related to venous insufficiency of the lower extremity veins. The etiology may be primary, due to venous valvular incompetence; or secondary, due to post deep vein thrombosis (DVT) vein wall damage. The clinical presentation includes leg swelling, pain, lipodermatosclerosis, hyperpigmentation, and venous stasis ulcers (VSUs) (found in the most severe cases). This affects 2.5 million patients per year in the United States and is estimated to cost more than $3 billion per year.1,2 The acute ulcers are problematic and require prolonged medical and surgical care; the recurrence rate of VSUs may be as high as 70%.3

Lack of disease understanding, lack of physician interest, and diffusion of patient care across multiple specialties all contribute to lack of CVD progress. In addition to a thorough medical history and physical examination, standard diagnostic testing for those who present with a VSU should include venous duplex ultrasonography. This yields information about luminal obstruction (post DVT), valvular competence, and whether the insufficiency affects the superficial, deep, or both vein systems anatomically. Similarly, an ideal biomarker would prognosticate patients with mild CVD, either primary or secondary, to either high or low risk of VSU and would be useful for guiding therapeutic interventions. Although several biomarkers, such as intercellular adhesion molecule-1, interleukin 6, and C-reactive protein, have shown some correlation with CVD severity, none are robust enough to use routinely at this point.

The Sixth Pacific Vascular Symposium was conducted under the auspices of The American Venous Forum (AVF). The goal of the symposium (held November 12–15, 2009; Big Island, Hawaii) was to decrease VSU by 50% by 2020. The organizing committee of the Sixth Pacific Vascular Symposium addressed this goal by evaluating research and development, education and awareness activities, health care priorities, and public policies regarding venous insufficiency, CVD, postthrombotic syndrome, and venous ulceration.

For this conference, the number of participating experts was limited to 60; their expertise was in venous disease, wound care, internal medicine, nursing, vascular technology, vascular surgery, basic science, epidemiology, health care management, the insurance industry, public policy, marketing, industry research and development, and government relationships. Faculty included members from academia, the private sector, and government.

Before the meeting, selected faculty proposed a list of critical issues that are necessary, sufficient, and feasible to solve to achieve the 50% reduction of venous ulcer prevalence in 10 years. The list was available to all participants and included critical issues in ulcer prevention in primary and postthrombotic diseases; critical issues in decreasing the reulceration rate in primary and postthrombotic diseases; critical issues in DVT prevention, DVT treatment, and prevention of postthrombotic syndrome; critical issues in the diagnosis and investigation of venous disease; critical nonmedical issues, such as awareness, education, insurance and government policies, and reimbursement structure; and critical issues in the relationship between industry and medical professionals.

During the meeting, 4 working groups were formed. (1) The first group focused on issues related to DVT and postthrombotic disease. (2) The second group concentrated on primary CVD. (3) The third group discussed issues related to ulcer healing and recurrence. (4) The fourth group was dedicated to nonmedical issues. During the meeting, the groups analyzed the suggested critical issues, proposed additional issues, and then graded those issues by their importance, practicality, and feasibility. During the second day of the meeting, existing evidence was presented; this evidence was organized along the lines of group focuses. The 4 groups continued working on the list of critical issues, identifying those that have sufficient support and gaps of knowledge that need more immediate attention. Specific aims for each of the critical issues, practical measures to achieve these aims, landmark measures of success, and a timeline for achieving the landmarks were discussed and established.

The following is a list of the critical issues collated together from the symposium and arranged topically. The full presentation of articles details the background and concrete plans for this overarching goal.4

Education and Awareness

There is a call for primary practitioners to learn about the pathophysiological features of venous disease and to perform appropriate diagnostic testing to identify patients with developing venous disease. This will decrease severe CVD, postthrombotic syndrome, and the incidence of venous ulcers. As part of this call, improved coordination of care within all levels of the health care system and development of standard guideline implementation will decrease venous ulceration. It is important for primary care physicians to understand their
role in limiting the lifelong progressive degenerative disorder called CVD.

Lack of awareness of venous ulcer recognition, diagnosis, treatment, and prevention at all levels of the health care system facilitates CVD and postthrombotic syndrome, leading to an increased incidence of venous ulceration. Educational programs targeting all levels of the health care system and implementation of smaller-scale models to prove the efficacy of educational and awareness efforts will decrease the incidence of venous ulceration.

**Prevention, Diagnosis, and Treatment**

The identification of variables other than hemodynamic factors to identify patients who are at risk for progression of their CVD to venous ulceration will allow for these patients to be appropriately treated, thus decreasing the incidence of venous ulceration. Likewise, the identification of appropriate treatments to prevent progression from mild to severe CVD will decrease the incidence of venous ulceration.

The standardization of diagnostic testing for CVD and criteria for interpretation of such testing will identify patients with primary venous disease. Such identification will allow for those patients to be appropriately treated, decreasing progression to severe CVD and its complication of venous ulceration.

The specific correction of treatable sources of axial reflux and deep vein obstruction are critical to control postthrombotic syndrome and the development of venous ulceration. This requires cooperation between wound care centers, primary care physicians, and other health care professionals. Compression, correction of venous reflux and obstruction, and venous surveillance are the keys to a program to decrease CVD and the development of venous ulceration.

**Management of DVT**

Stratifying patients with acute DVT who are at risk of developing severe postthrombotic syndrome will decrease the incidence of venous ulcers. Early thrombus removal in patients with iliofemoral DVT and elimination of chronic postthrombotic obstruction of the iliofemoral venous segment will likely decrease the incidence of postthrombotic syndrome and subsequent venous ulceration.

Preventing DVT recurrence and providing appropriate compression and ambulation after DVT will decrease DVT recurrence, the subsequent development of postthrombotic syndrome, and venous ulceration.

**Reimbursement and Government Relations**

Cost-effective quality care and optimal reimbursement must be emphasized to improve the treatment of CVD, postthrombotic syndrome, and venous ulceration. In addition, funding for venous ulcer prevention and treatment programs is necessary in the health care system.

There is a need for a strong central organization to promote the prevention and treatment of venous ulcers. This central organization will affect health care policy, improve the care of patients with venous disease, and decrease the incidence of venous ulceration.

With the identification of these critical issues, we can prioritize the ones that we should address immediately to make a significant impact on decreasing the incidence of VSU by 50% by 2020. In addition, research into these issues is needed to answer the questions that these issues raise. Examples of such questions include the effectiveness of early intervention to alter the progression of both primary and secondary CVD, and the role of biomarkers to determine which patients will be diagnosed as having CVD (after venous thrombosis). We need support from both the public and private sectors, including our industrial partners, to help address these issues and make the appropriate advances listed. These priorities allow us to direct our future ongoing efforts.

**Disclosures**

None.

**References**


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