PART 1
VENOUS LEG ULCERS
TREATMENT AND MANAGEMENT:
UNDERSTANDING CHRONIC VENOUS
INSUFFICIENCY AND VENOUS LEG ULCERS
VENOUS LEG ULCERS TREATMENT AND MANAGEMENT: UNDERSTANDING CHRONIC VENOUS INSUFFICIENCY AND VENOUS LEG ULCERS

INTRODUCTION

More than 80 million Americans have vein disease, including chronic venous insufficiency (CVI), with 40% of women and 20% of men having significant problems by age 50.¹ These disorders have a very high rate of recurrence and can develop into more serious conditions such as venous leg ulcers (VLUs). This makes caring for patients with CVI or VLU incredibly costly for patients and health care providers.² VLU care is estimated at $3 billion annually, thus making it a significant burden on the health care system.³⁻⁵ Understanding the causes, risk factors, and best practice treatment and management options is critical to reducing the risk of complications, optimizing outcomes for patients, and minimizing costs.
CAUSES OF CVI

CVI results from weak or damaged valves that allow backflow of blood in the veins. This leads to blood pooling, enlarged veins, and blood clots. Untreated, CVI can progress through several stages, ultimately leading to VLUs. Being able to identify these stages and taking steps to slow or halt the progression are important for improving patients’ outcomes. Utilizing a classification system such as CEAP (Clinical, Etiology, Anatomic, and Pathophysiology) designed to help identify each stage can help health care professionals take steps to prevent VLUs and monitor patients’ conditions.6

CEAP CLASSIFICATION SYSTEM

Patients may be experiencing possible symptoms of CVI such as a heavy sensation in the legs, pain, and pruritus. However, at this stage there are no clinical signs of CVI. Health care professionals should regularly check at-risk patients for signs of development6

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C0S</td>
<td>No symptoms, no clinical signs of CVI</td>
</tr>
<tr>
<td>C1</td>
<td>Telangiectasia or reticular veins may be present</td>
</tr>
<tr>
<td>C2</td>
<td>Varicose veins</td>
</tr>
<tr>
<td>C3</td>
<td>Edema</td>
</tr>
<tr>
<td>C4a</td>
<td>Pigmentation and/or eczema</td>
</tr>
<tr>
<td>C4b</td>
<td>Lipodermatosclerosis and/or atrophie blanche</td>
</tr>
<tr>
<td>C5</td>
<td>Healed venous ulcer</td>
</tr>
<tr>
<td>C6</td>
<td>Active venous ulcer</td>
</tr>
</tbody>
</table>

Vascular System - Anatomy and Physiology

Venous System Components
- Superficial system veins
- Deep system veins
- Perforators or connectors

Venous Return Influencers
- Heart
- Respiratory pump
- Venous valves
- Venous tone
- Calf muscle pump
At each stage of disease progression, it is important for health care professionals to reevaluate treatment and take steps to impede or reverse the process. This means following best treatment practices and taking a proactive approach. Increasingly, research shows that successful treatment of VLUs requires a combination of compression therapy and optimal wound healing conditions. This allows patients to heal rapidly while reducing the risk of recurrence.5

THE HIGH COSTS OF CVI AND VLUS

CVI is a chronic illness with potentially serious complications, including VLUs. These complications also have a high rate of recurrence, meaning that patients often struggle with CVI and VLUs for the remainder of their lives. Therefore, these conditions have a significant impact, both on patients’ quality of life and on costs. This situation makes it important for health care professionals to follow current best practice guidelines for care and to work to prevent recurrence.1,2

Impact on Patients

CVI can dramatically affect patients’ well-being including significant discomfort, swelling, tension and pain, all of which limit mobility. Blood pooling caused by CVI can also lead to blood clots, which can be debilitating or life threatening, particularly if they lead to strokes. This makes it important that health care professionals promote good circulation through compression therapy.6

VLUs resulting from CVI are also common, accounting for between 60% and 80% of all leg ulcers. These ulcers often require significant treatment and can lead to longer hospital stays and recurring complications. VLUs can also be debilitating and dangerous for patients and can lead to reduced mobility, severe pain, infection, amputation, and death.7

Financial Costs

CVI and VLUs also have major financial implications for patients and health care professionals. VLUs in particular require significant care, can be slow to heal, and have a high rate of recurrence. These factors combine to make VLUs a major burden on the health care system. Recent estimates show that the cost of treatment of VLUs per patient in the United States is $10,000 to $12,000 per year, with the average lifetime cost of care greater than $40,000.8 Implementing practices that help reduce rates of recurrence and improve healing time could significantly reduce these costs while improving patients’ outcomes.
BEST PRACTICE TREATMENT OPTIONS FOR CVI AND VLUS

To manage CVI and VLUs effectively, it is critical that health care professionals take proactive measures using an integrated approach to management, combining compression therapy with treatments that support optimal wound healing. A multistep approach that combines effective modern treatments with rapid evaluation and risk factor identification can help minimize risks to patients and reduce the risk of recurrence.9

Understand Risk Factors – Identifying at-risk individuals and factors that could exacerbate their condition is critical to CVI management. Common risk factors include obesity, lack of exercise, hormonal changes, smoking, and alcohol use. Eliminating or reducing these risk factors can help prevent or reverse the progression of CVI and reduce the risk of VLU recurrence. It is also important for health care professionals to understand the current state of the patient’s CVI and to classify the patient’s condition according to the CEAP system. This will help create a more effective plan for treatment that effectively addresses the patient’s needs.5,6

Define Treatment Goals – An effective care plan for CVI and VLUs should treat the underlying lack of circulation, minimize or eliminate perpetuating factors, create the optimal environment for wound healing, and minimize the risk of recurrence. Accomplishing these goals requires an integrated approach to treatment that promotes wound healing and utilizes compression therapy to improve circulation.

BSN Medical, Inc Integrated Therapy Solutions

BSN medical, Inc offers an integrated approach to CVI and VLU treatment. Our system helps remove exudate and bacteria, rebuild tissue, reduce edema with compression therapy and prevent recurrence with JOBST compression legwear.9 This combined approach can help health care professionals effectively treat more VLU and prevent recurrence.6,7

In the following section we will explain the remove and rebuild steps of the system. In the next white paper in our series, we will explain the reduce and prevent steps of the VLU recommended model (see following images):

Remove – Exudate and bacteria can impede healing and lead to infection and more serious complications. BSN’s integrated therapy solutions promote rapid healing and reduce the risk of infection by safely and irreversibly binding bacteria, so cell debris is safely removed from the wound bed with Cutimed® Sorbion® Sorbact®. This dressing has no release of chemically active agents and eliminates the risk of bacterial resistance to manage infections, as well as absorb exudate to reduce maceration, thus optimizing the VLU healing environment and improving patients’ outcomes.5,6

Rebuild – VLUs can be slow to heal due to their complicated nature. BSN’s Integrated Therapy Solutions use a collagen dressing to help heal the wound. Cutimed® Epiona is a native bovine collagen dressing with a porous 3D matrix technology that helps rebuild new tissue in stalled wounds. Epiona is developed with the same microstructure as the intact collagen network of human skin, allowing it to capture and bind excessive proteases and MMPs to help protect the growth factors that stimulate healing.5,6

CONCLUSION

If health care professionals are not proactive, CVI can rapidly progress, leading to VLUs and other serious complications. It is important to understand the risk factors and progression stages of the disease, to take preventative measures and prevent recurrence. Outcomes for patients can also be improved by taking an integrated approach to management and treatment, combining therapies that work synergistically for healing and prevention.

BSN Medical’s Integrated Therapy Solution encourages an integrated approach to CVI and VLU treatment. By helping to remove exudate and bacteria, rebuild tissue, and reduce edema with compression therapy, this system helps to promote rapid and complete VLU healing while treating the underlying cause. Health care professionals will then be able to treat VLUs more effectively, prevent VLU recurrence, and thereby improve the quality of their patients’ lives - all while reducing costs.

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