

**TABLE 80-2 SCLERODERMA MIMICS**

DISORDER	DISTINGUISHING FEATURES
<b>OTHER DISEASES</b>	
Morphea	One or more discrete lesions; patchy or linear in distribution
Eosinophilic fasciitis	Finger flexures without sclerodactyly; characteristic groove sign when the arms are raised; puckering or dimpling of the upper arm and thigh skin; peripheral blood eosinophilia; fascia and deep subcutaneous fibrosis
Scleredema (Buschke's disease)	Prominent involvement of neck, shoulders, and upper arms; hands spared; associated with diabetes
Scleromyxedema	Association with gammopathy; skin lichenoid and thickened but not tethered; may have Raynaud's phenomenon
Graft-versus-host disease	Skin changes similar to scleroderma; vasculopathy
Nephrogenic fibrosing dermopathy	Indurated plaques or nodules on the legs or arms, sparing the face; administration of gadolinium in the setting of renal dysfunction; often preceded by edema
<b>REACTIONS TO ENVIRONMENTAL AGENTS AND DRUGS</b>	
Bleomycin	Skin and lung fibrosis similar to scleroderma
L-Tryptophan (1980s)	Eosinophilia-myalgia syndrome from L-tryptophan contaminant or metabolite (first described in the 1980s); fever, eosinophilia, neurologic manifestations
Organic solvents (e.g., trichloroethylene)	Clinically indistinguishable from idiopathic systemic sclerosis
Pendazocine	Localized lesions at injection sites
Toxic oil syndrome	Contaminated rapeseed oil (Spanish epidemic in 1981); similar to eosinophilia myalgia syndrome
Vinyl chloride	Vascular lesions, acro-osteolysis, sclerodactyly, no visceral disease
Gadolinium	Nephrogenic fibrosing dermopathy

complications. Patients with active dcSSc should undergo weekly monitoring of blood pressure because the abrupt appearance of hypertension suggests SRC. Early dcSSc patients should also have skin thickness scores assessed for progression or regression of cutaneous disease. For dcSSc and lcSSc, initial esophageal motility studies should be performed, and further objective studies should be ordered on the basis of symptoms.

Education of patients and family members regarding the disease and the patient's classification (i.e., early or late, diffuse or limited disease) can help to alleviate patients' anxiety. An excellent publication, *The Scleroderma Book: A Guide for Patients and Families*, is available.

### Raynaud's Phenomenon

Calcium-channel blockers have been widely used for decades, and they are generally well tolerated by patients. Long-acting nifedipine is effective in more than one half of patients, and newer agents such as amlodipine are frequently prescribed (level 1B evidence). The angiotensin-receptor blocker losartan reduced the severity and frequency of Raynaud's phenomenon attacks in a placebo-controlled trial. ACE inhibitors have not proved effective in several controlled trials. Phosphodiesterase-5 (PDE-5) inhibitors have been shown to improve Raynaud phenomenon (level 1A evidence).

In patients with digital ulcerations, more aggressive therapy may be warranted. PDE-5 inhibitors have been helpful (level 1B

evidence) has been helpful. Topical nitroglycerin as a paste, gel, or patch placed at the base of the fingers may be a useful adjunct. In randomized, placebo-controlled trials, bosentan prevented the formation of new digital ulcerations in patients with SSc and Raynaud's phenomenon, although it has not been approved by the U.S. Food and Drug Administration (FDA) for this indication (level 1B evidence). Iloprost, an intravenous prostacyclin, has also been shown to reduce digital ulcerations and is frequently used in Europe, but also it is not FDA approved in the United States (level A evidence).

For patients with digital ulcers involving adjacent fingers, assessment of the ulnar and radial artery should be performed with arterial Doppler or angiography because larger arteries can become severely narrowed. Surgical interventions include sympathectomy of the digital, radial, or ulnar artery and venous bypass for ulnar or radial artery occlusion. In SSc patients with recurrent digital ulcers or other thrombotic events, evaluation for a hypercoagulable state, particularly for lupus anticoagulant, should be performed. In this circumstance, aspirin or other anti-coagulants are indicated.

### Cutaneous Disease

No therapeutic agent has been found to improve skin thickening in a randomized, placebo-controlled trial for patients with dcSSc. Several methodologic issues have contributed to the negative findings, including the drugs chosen, patient populations, and trial designs. In the past, considerable attention was given to methotrexate and D-penicillamine, but no convincing data support the use of either drug.

Case series with historical controls and comparisons with clinical trials have suggested a benefit for mycophenolate mofetil, although it has not been studied in a randomized setting (level B evidence).

Several reports on the benefit of autologous stem cell transplantation have been published. In an ILD study, cyclophosphamide use showed significant improvement in skin thickening in treated patients compared with placebo. Unless there is a serious internal organ complication, this potent therapy cannot be recommended because of the concern about life-threatening adverse effects, including malignancy.

### Scleroderma Renal Crisis

Early diagnosis and prompt initiation of ACE inhibitors are the keys to improved survival and outcomes of SRC. ACE inhibitors should be titrated to maintain a normal blood pressure (level 3 evidence), preferably less than 125/75 mm Hg.  $\beta$ -Blockers are relatively contraindicated.

Even if patients with SRC become dialysis dependent initially, some may experience a slow reversal of renal vascular damage if ACE inhibitor therapy is maintained. Because up to 50% of SRC patients can spontaneously come off dialysis, transplantation evaluation should be delayed until at least 2 years after SRC onset.

### Interstitial Lung Disease

Early recognition of inflammatory ILD is important if treatment is to prevent progression to distortion of lung architecture and irreversible fibrosis. A recent large, randomized,