

## Differential Diagnosis of Congestive Heart Failure

Disease	Characteristics	Notes
<b>Underlying etiologies of CHF</b>		
Ischemic heart disease (myocardial infarction, severe CAD, papillary muscle dysfunction or rupture)	History of myocardial infarction, presence of infarction pattern on ECG, risk factors for coronary disease	
Idiopathic dilated cardiomyopathy	Heart failure in a patient with no coronary disease risk factors or known coronary disease	
Hypertension	History of poorly controlled hypertension, presence of an S4 on physical examination, left ventricular hypertrophy on echocardiogram or ECG	
Valvular heart disease (mitral regurgitation, aortic insufficiency, aortic stenosis, tricuspid regurgitation, pulmonic insufficiency)	Mitral regurgitation: ejection murmur at apex. Dyspnea on exertion, atrial fibrillation. Aortic stenosis: dyspnea with exertion, ejection murmur at base that radiates to carotid arteries, decreased carotid upstrokes, syncope, angina	
Bacterial myocarditis ( <i>Borrelia burgdorferi</i> [Lyme disease], diphtheria, rickettsia, streptococci, staphylococci)	Fever, exposure to known agent, positive blood cultures	
Parasitic myocarditis ( <i>Trypanosoma cruzi</i> [Chagas disease], leishmaniasis, toxoplasmosis)	Travel history to endemic areas, fever, peripheral stigmata of infection	Rare in the U.S.
Familial dilated cardiomyopathies	Family history of heart failure or sudden cardiac death in blood relatives	
Toxic cardiomyopathies (alcohol, anthracycline, radiation, cocaine, catecholamines)	History of exposure to the toxic agent	
Collagen vascular disease (SLE, polyarteritis nodosa, scleroderma, dermatomyositis)	History of a collagen vascular disease, positive serology results for a collagen vascular disease, other stigmata of a collagen vascular disease	
Granulomatous disease (Wegener's granulomatosis, giant cell arteritis), sarcoidosis	Arrhythmias (both atrial and ventricular) that are difficult to control, rapidly progressive left ventricular dysfunction	
Endocrinologic/metabolic disorders (hyperthyroidism, acromegaly, hypothyroidism, uremia, pheochromocytoma, diabetes mellitus, thiamine deficiency, selenium deficiency, carnitine deficiency, kwashiorkor, carcinoid, obesity)	Clinical history, serum test for endocrine abnormality, long-term resident of a third world country or an endemic area for a nutritional deficiency	Nutritional deficiencies are very rare in the U.S.

Giant cell myocarditis	Intractable ventricular or supraventricular arrhythmias with rapidly progressive left ventricular dysfunction	Endomyocardial biopsy specimen may be used to confirm the diagnosis. Effective immunotherapy may be available but prognosis is poor. Patients should be transferred to a center capable of ventricular assist device placement and cardiac transplantation
Peripartum cardiomyopathy	Heart failure symptoms with left ventricular dysfunction within 6 months of a pregnancy	
Neuromuscular disorders (Becker's muscular dystrophy, myotonic dystrophy, Friedreich's ataxia, limb-girdle muscular dystrophy, Duchenne muscular dystrophy)	Appropriate clinical history and physical examination as per the underlying disease	
Cardiac transplant rejection	History of cardiac transplant, noncompliance with medications, shortness of breath, atrial or ventricular arrhythmias, tachycardia	
Hypertrophic cardiomyopathies (hypertrophic cardiomyopathy [genetic], hypertension)	History of hypertrophic cardiomyopathy, family history of hypertrophic cardiomyopathy, echocardiographic and ECG findings of hypertrophy	Screen for outflow tract gradient by physical examination, echocardiography, or cardiac catheterization
Restrictive cardiomyopathies (amyloidosis, sarcoidosis, hemochromatosis, Fabry's disease, glycogen storage diseases, Gaucher's disease, mucopolysaccharidosis, endomyocardial fibrosis, hypereosinophilic syndrome)	Appropriate history, thickening of the myocardium on echocardiogram suggesting an infiltrative process, cardiac MRI showing infiltration, family history of an inborn error of metabolism or amyloidosis, presence of S4 on examination, right-sided heart failure more severe than left-sided, other organs involved in underlying disease process	
<b>Pulmonary and other conditions that can mimic or exacerbate heart failure</b>		
Asthma	Dyspnea at rest and with exertion. Physical examination reveals wheezing. Symptoms may be relieved by $\beta$ -agonist inhalers	
Pulmonary embolism	Pleuritic chest pain, tachycardia, evidence of DVT. Right heart strain pattern on ECG and seen on echocardiogram	
Atrial fibrillation	Palpitations, syncope, rapid irregular pulse	May be a consequence or cause of heart failure
Supraventricular arrhythmias	Rapid heart rhythm, syncope, palpitations	
Chronic obstructive pulmonary disease	Dyspnea at rest or with exertion, chest x-ray findings consistent with COPD	
Septic shock	Hypotension, fever	

Pneumonia	Fever, cough, sputum production, focal pulmonary consolidation on physical examination, characteristic chest x-ray findings	
Interstitial pulmonary disease	Dyspnea, arterial oxygen desaturation with exercise, characteristic pulmonary function testing abnormalities, characteristic high-resolution chest CT scan findings	
Sleep apnea	Fatigue, frequent napping, difficulty concentrating, obesity, bed partner notes irregular breathing or apneas during sleep, snoring, atrial fibrillation, hypertension	Obstructive sleep apnea is associated with obesity. Severe heart failure associated with central sleep apnea
Renal insufficiency	Uremic symptoms, edema, dyspnea, fatigue	May be a consequence or a cause of heart failure
Anemia	Fatigue, dyspnea on exertion, pallor	Associated with "high-output" heart failure

CHF = congestive heart failure; COPD = chronic obstructive pulmonary disease; CT = computed tomography; DVT = deep venous thrombosis; ECG = electrocardiography; MRI = magnetic resonance imaging; SLE = systemic lupus erythematosus.

Table from Physicians' Information and Education Resource (PIER), *Congestive Heart Failure* module.