

Undiagnosed COPD Is Common in Heart Failure

BY BRUCE JANCIN
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MUNICH — Chronic obstructive pulmonary disease is an extremely common yet often unrecognized comorbid condition in patients with systolic heart failure, according to the findings of two studies.

"Data on COPD and heart failure are really scarce, probably because the leading symptom—dyspnea—is shared. If heart failure is known in a patient, physicians tend to be content to treat the heart failure without further diagnostic work-up," said Dr. Christiane E. Angermann, professor of medicine at the University of Würzburg (Germany).

Even when the comorbid COPD is diagnosed in a patient with chronic heart failure, it is most often inadequately treated, she added in an interview.

At the annual congress of the European Society of Cardiology, Dr. Angermann reported on a series of 512 consecutive patients, mean age 66 years, with a mean left ventricular ejection fraction of 31% when hospitalized for acute decompensated systolic heart failure. They were discharged after their heart failure was stabilized, then examined 6 months later when they underwent pulmonary function testing as well as structured assessments of quality of life and depressive symptoms.

The prevalence of COPD in this large unselected cohort of heart failure patients was 31%, based upon the widely utilized Gold criterion of a ratio of postdilatory forced expiratory volume in 1 second divided by forced vital capacity (FEV₁/FVC) of less than 0.7. The prevalence was similar in men and women.

In only 26% of affected patients was the COPD previously diagnosed. Three-quarters of those with known COPD were on bronchodilator therapy. Among those

with known COPD who were being treated for it, 72% had an FEV₁/FVC of 0.8 or less, as did 74% of patients with known but untreated COPD.

Patients with COPD had more symptomatic heart failure, more depressive symptoms, worse quality of life scores, and more systemic inflammation than did those with heart failure but not COPD. (See chart.)

Eighty-eight percent of heart failure patients with COPD and 92% without COPD were on a cardioselective β -blocker, with no apparent adverse pulmonary effects in the COPD group. It appears physicians no longer accept



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the traditional contraindication of β -blockade in patients with COPD, Dr. Angermann observed.

Among the influential studies in terms of changing physician thinking on this score was a meta-analysis led by Dr. Shelly R. Salpeter of Stanford (Calif.) University, which concluded that the use of cardioselective β -blockers in patients with COPD doesn't reduce airway function or increase the rate of COPD exacerbations (Respir. Med. 2003; 97:1094-1101).

In a separate presentation at the congress, investigators at the University of Salzburg (Austria) reported that 38 of 86 (44%) unselected patients with systolic heart failure who underwent blinded spirometric screening met diagnostic criteria for COPD. Only 14 of the 38 were already known to have COPD. All patients with COPD, whether previously known or not, were on a cardioselective β -blocker.

Impact of Comorbid COPD and Chronic Heart Failure

Patient characteristics	Heart failure with COPD	Heart failure without COPD
Mean NYHA class	2.2	2.0
Quality of life assessed by Short Form-36 physical function score	50	59
Depressive symptoms on nine-item Patient Health Questionnaire screen	7.3	5.9
Heart rate	71 bpm	67 bpm
WBC count	8,200/mm ³	7,600/mm ³
Mean LVEF	43%	42%

Note: All differences except LVEF are statistically significant.
Source: Dr. Angermann

CLINICAL GUIDELINES FOR FAMILY PHYSICIANS

Resistant Hypertension

BY NEIL S. SKOLNIK, M.D., AND LEILA S. HARDWARE, D.O., M.P.H.

Resistant hypertension is defined as blood pressure that is above goal despite the use of three or more appropriate antihypertensive agents at maximal or near maximal doses, with one of the agents being a diuretic. As many as 30% of patients with hypertension may have resistant hypertension. New guidelines now define a clear approach to the evaluation and management of this condition (Hypertension 2008;51:1403-19).

Predictors of resistant hypertension include age older than 75 years, obesity (a body mass index greater than 30 kg/m²), left ventricular hypertrophy, and chronic kidney disease.

Guidelines are most useful when they are available at the point of care. A concise yet complete handheld computer version of this guideline is available for download, compliments of FAMILY PRACTICE NEWS, at www.redi-reference.com.

Causes

Lifestyle factors contributing to the condition include obesity, excess salt intake, and excessive alcohol use. Medications—including NSAIDs, cyclooxygenase-2 inhibitors, sympathomimetic compounds, modafinil, oral contraceptives, herbal preparations containing ephedra, and erythropoietic agents—may also have a role.

When evaluating the cause of resistant hypertension, you should first evaluate for pseudoresistance, which can be caused by using a blood pressure cuff that is too small for a patient's arm, by not letting a patient sit long enough for the measurement to represent a resting value, by poor adherence to prescribed medications, or by white-coat hypertension.

After pseudoresistance has been addressed, evaluate for secondary forms of hypertension, which are divided into common and uncommon causes. Common causes include sleep apnea, renal parenchymal disease, renal artery stenosis, and primary aldosteronism. Resistant hypertension is more common in patients with diabetes, although it is unclear whether insulin resistance contributes to or is simply associated with resistance.

Uncommon causes of resistant hypertension include Cushing's syndrome, pheochromocytoma, hyperparathyroidism, intracranial tumors, and aortic coarctation.

Evaluation

When evaluating resistant hypertension, you should first check for treatment resistance by measuring blood pressure repeatedly with a proper-size cuff using good technique and confirming that medication compliance is optimal. Drugs that may interfere with blood pressure control should be discontinued, if possible. Check the history for obstructive sleep apnea.

A physical exam should look for evidence of end-organ damage, including retinopathy and bruits, features of Cushing's syndrome, and—by measuring blood pressure in both arms—aortic coarctation. If white-coat hypertension is a factor, then blood pressure readings at home or work, or ambulatory blood pressure monitoring, should be considered.

A laboratory evaluation of resistant hypertension includes a basic metabolic profile, urinalysis, and paired morning plasma aldosterone/plasma renin levels or plasma renin

activity to screen for primary aldosteronism. The aldosterone:renin ratio has good sensitivity with a high negative predictive value, but the specificity is low, so positive tests require further work-up.

Measurements of 24-hour urinary metanephrines or plasma metanephrines are effective screens for pheochromocytoma and can be used when a pheochromocytoma is suspected from clinical history. Imaging for renal artery stenosis can be considered in young patients with severe hypertension where there is concern for fibromuscular dysplasia, and in older patients who are at increased risk for vascular disease. In most cases, there is no secondary cause because the cause is often multifactorial.

Treatment

Lifestyle modification with a low-salt, high-fiber, low-fat diet; weight loss; moderation of alcohol intake; and exercise should be encouraged. Prescribed regimens should be simplified as much as possible to facilitate adherence.

Evaluation of resistant hypertension at tertiary referral centers shows that treatment resistance is often related to a lack or underuse of diuretic therapy, so blood pressure can often be improved simply by increasing doses of diuretics or by changing to a more potent diuretic. Chlorthalidone has been shown to have superior efficacy, compared with hydrochlorothiazide, in patients with resistant hypertension. In patients with chronic kidney disease, the use of Lasix (often twice a day) rather than hydrochlorothiazide can help improve blood pressure control.

Recent studies indicate that aldosterone antagonists may have additional benefit in patients whose blood pressure is uncontrolled on multidrug regimens. In studies evaluating patients with poorly controlled hypertension, spironolactone (12.5-50 mg daily) or amiloride (2.5-10 mg) lowered blood pressure by an additional 12-25 mm Hg systolic and 3-12 mm Hg diastolic over the patients' current multidrug regimen.

If blood pressure remains elevated after evaluation for secondary causes and treatment with the interventions described above, referral to a hypertension specialist is recommended.



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