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Chronic Disease Management in Family Practice: Clinical Note

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Chronic disease management is the process of evaluating and treating a medical condition or disease state which can not be readily cured so as to minimize it's negative impact on the individual. Examples of chronic disease management include the treatment of hypertension, diabetes, osteoporosis, and asthma. In the management of these diseases, the goal of treatment is not to simply try to maintain an ideal blood pressure or blood sugar, but to reduce the risk of early mortality and morbidity associated with these disease states and to keep the individual as functional as possible. To do so, the treating physician must periodically evaluate the patient to assess his or her functional status and end-organ status as well as review co-morbid conditions and risk factors which might contribute to the progression of the patient's disease state. The following paper is a discussion of chronic disease management in the family practice setting. This paper discusses chronic disease management in the family practice setting.

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Chronic Disease Management in Family Practice: Clinical Note

Joel Dickerman, DO

Introduction:

Chronic disease management is the process of evaluating and treating a medical condition or disease state which can not be readily cured so as to minimize it's negative impact on the individual. Examples of chronic disease management include the treatment of hypertension, diabetes, osteoporosis, and asthma. In the management of these diseases, the goal of treatment is not simply to try to maintain an ideal blood pressure or blood sugar, but to reduce the risk of early mortality and morbidity associated with these disease states and to keep the individual as functional as possible. To do so, the treating physician must periodically evaluate the patient to assess his or her functional state and end-organ status, as well as review co-morbid conditions and risk factors which might contribute to the progression of the patient's disease state. The following paper is a discussion of chronic disease management in the family practice setting.

Chronic Disease Management: Evaluation of the chronic disease state

By definition, a chronic disease state is one that will not resolve either with treatment or on its own for a long period of time, and may last forever. Several disease states are known to fit into this definition and include, diabetes, hypertension, degenerative joint disease, osteoporosis and asthma. Although this list is only a fraction of all of the diseases that are considered chronic, collectively they represent two important concepts of chronic disease; first, they have specific diagnostic criteria; and, secondly, they must not be due to a secondary cause. In the case of hypertension, elevated readings above a systolic pressure of 146 and/or a diastolic pressure of 90 must be reported on at least two occasions. To be considered chronic essential hypertension, these elevated readings must *not* be due to some secondary cause as outlined in Table 1 .

Table 1: Clinical Presentations Associated with Secondary Hypertension

Age of onset: before age 30 or after age 50	
Worsening renal function on an ACE-inhibitor	
Poorly controlled on three or more medications	
Associated with a laboratory abnormality:	Low potassium-Cushing's syndrome, Hyperaldosteronism
	Elevated glucose-Cushing's syndrome, diabetic Nephropathy
	Elevated calcium-hyperparathyroidism
Associated with use of other medications:	Tricyclic antidepressants, decongestants, stimulants, Estrogen, androgens, alcohol ingestion
Associated with hyperdynamic state (i.e., increased pulse, sweating): Pheochromocytoma, Hyperthyroidism	

A disease may also be considered chronic if it persists for a long period of time without an apparent upcoming resolution. Chronic pain is one such condition. It is defined as the presence of pain for greater than six months with no one, immediate, curative intervention. The same may be said of chronic renal failure or chronic liver failure. Both diseases are often due to a noxious injury, that even after being withdrawn, has diminished the functional capacity of that organ. In chronic cases of organ insufficiency the condition is considered irreversible. However, the degree of dysfunction may be slowed or arrested.

Therefore, to define a chronic medical condition, the treating physician must: 1) determine if the disease process meets the diagnostic criteria of a specific disease state OR is present for a prolonged period of time; and 2) is not due to an underlying medical problem which is reversible. By evaluating the patient for these two determining factors, the treating physician can avoid overlooking an underlying disease process and better understand that particular patient's chronic disease state.

Chronic Disease Management: Goals of disease management

In treating chronic disease, it is the goal of the physician to prevent or slow the complications associated with that disease which might: 1) lead to premature mortality; 2) increase the risk of morbidity (i.e., organ failure): and 3) may diminish functional capacity. To identify these complications, the treating physician must know the common complications of various chronic diseases. Table 2 lists possible complications of some of the more common chronic diseases.

Table 2: Chronic Disease Management

Disease	Possible complications
Hypertension	Heart disease, vascular disease, renal disease, stoke, retinal disease
Diabetes	Heart disease, vascular disease, renal disease, stoke, retinal disease , neuropathy, gastroparesis
Asthma	Exercise intolerance, recurrent respiratory infections
COPD	Recurrent bronchitis, cor pulmonale, exercise intolerance, peptic ulcer disease
HIV	Opportunistic infections, cancer
Obesity	Heart disease, vascular disease, renal disease, stoke, retinal disease, degenerative joint disease, diabetes
Hypercholesterolemia	Heart disease, vascular disease

The initial physician evaluation and subsequent re-evaluation should focus on determining the presence of end-organ pathology and provide an assessment of functional status. In the case of the hypertensive patient, evaluation should look for the presence of retinal disease, including a fundoscopic examination and visual acuity screening test, auscultation of the heart for the presence of an S4 (indicative of a non-compliant ventricle), urinalysis for protein or microalbumin, an examination of peripheral pulses (and perhaps upper and lower extremity blood pressures), and auscultation for carotid bruits. In cases where long-standing or poorly controlled hypertension exists, the physician may consider an electrocardiogram to assess the patient for atrial or ventricular hypertrophy.

Functional assessment of the hypertensive patient would include a review of the patient's exercise tolerance (how many stairs can he or she climb, how far can he or she walk before becoming short of breath), the presence of anginal symptoms, and the presence of claudication. In addition, the individual should be questioned as to the presence of fleeting neurologic symptoms that might indicate a TIA or progressive carotid stenosis.

Finally, the patient should be evaluated for the presence of co-morbid conditions that might contribute to the progression of the chronic disease state. Again, in the case of the hypertensive patient, this would include a family history of coronary artery disease, the presence of an elevated cholesterol, smoking history, and whether the patient is diabetic or has had a history of hypercoaguable state.

These same principles can be applied to more challenging clinical conditions, such as chronic pain management. Chronic pain is often a frustrating problem for the physician as its treatment usually centers around the use of pain medications and the formulation of few treatment goals. As in the treatment of hypertension, the treating physician should approach the chronic pain patient from the perspective of decreasing morbidity and mortality, and improving functional

status. The physician should watch for signs of medicine-induced complications (gastritis and renal insufficiency with NSAIDS; acetaminophen toxicity with narcotics containing this agent; lethargy and depression (associated with narcotics), functional status (the ability to perform the three basic day-cycle functions: work, recreate, and sleep), and monitor for end-organ effects of the disease process itself (for example, in the case of a bulging disc, periodically evaluate for disc degeneration and resultant facet degeneration). By focusing on the concept of *chronic disease management*, the treating physician can hopefully reduce the patient's reliance on pain medication, and formulate a long term management plan instead of treating periodic pain flare-ups.

Chronic Disease Management: Longitudinal patient monitoring

The goal of chronic disease management is ultimately to improve patient independence and self-reliance, *not* to make the patient more reliant on the medical system. Although the assessment process detailed above is time consuming and requires an investment of time on the part of the patient and physician, it does not mean that responsibility can not be slowly turned over, at least in part, to the patient. Once a patient has become well controlled regarding his or her hypertensive disease, and end-organ disease is under control, the patient should no longer be seen for monthly blood pressure checks. The patient should be encouraged to check his or her blood pressure periodically with the nurse or at home and instructed to record these results so that they can be reviewed by the treating physician at the annual or semi-annual assessment visit. The patient can be provided with "panic values" reflecting either too high or too low blood pressure readings, and told to contact the physician if these values occur. This not only helps the physician to concentrate more on the over-all management of hypertension, but also gradually encourages patients to become active participants in their own health care.

On the other hand, if a patient is suffering from significant end-organ effects of hypertension, (e.g. renal insufficiency), patient visits may need to made more frequently. The best treatment for chronic renal failure is to prevent it from reaching a chronic state. Frequent evaluation and treatment may be required to intervene in a case of renal insufficiency, hopefully to reverse its cause, or at least, slow its progress. Again patients should become active participants in their own care program, recording daily weights, controlling co-morbid medical conditions, and aiding in the identification of any medications potentially toxic to the kidney.

Summary

Chronic disease management is the process of managing a chronic illness so as to minimize potential complications. This process includes reducing chronic disease mortality, and morbidity, and maximizing functional status.

The process of chronic disease management begins with the establishment of the presence of a chronic disease, that is, a disease state that has no immediate cure and is anticipated to last for a considerable, if not indefinite, period of time. The treating physician should then evaluate the patient for any end-organ disease effects and determine how that patient's disease has affected functional status.

Finally, chronic disease management involves a long-term treatment plan that actively encourages patient involvement. Physician visits should not be based solely on a rigid re-evaluation schedule, but should impart increasing patient responsibility in the management of personal disease processes. Developing this patient involvement not only maximizes disease management but makes it cost effective as well.