Anxiety in the Medical Patient

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Anxiety is a ubiquitous, natural affective state that is essential for evolutionary survival. Nearly as common, however, are experiences of anxiety that exceed social, psychological, or physiological needs, leading to functional impairment. Indeed, primary anxiety disorders, including panic disorder, social phobia, and generalized anxiety disorder (GAD), represent the most common category of mental illness in the United States. Secondary, or reactive, anxiety is also widespread and can arise not only from numerous medical causes but also from the psychological process of coping with illness. Consequently, it is not surprising that diagnosing and treating anxiety poses a common question for the consultation-liaison psychiatrist. In this article, we review 5 themes concerning the interaction between anxiety and medical illness, and comment on the implications for treatment.

Anxiety secondary to medical illness
In some cases, anxiety may be the first or most prominent symptom of an underlying medical illness that has not yet been diagnosed. Clinical examples include the patient with a sudden pulmonary embolus who presents with apparent panic-like symptoms and shortness of breath; the patient with episodic anxiety attacks and a feeling of unreality who is having complex partial seizures; or a tremulous, diaphoretic patient with tachycardia who turns out to have hyperthyroidism. Less common medical illnesses that can present with anxiety include adrenal dysfunction, carcinoid syndrome, pancreatic tumor, and pheochromocytoma.

While the possibilities are numerous, it is important to remember that anxiety can represent merely a symptom and that only after a careful workup can its diagnostic significance be determined. A thorough physical examination, as well as laboratory studies and an ECG when appropriate, is essential for ruling out medical causes and avoiding the misdiagnosis of a primary psychiatric illness. Given their potential morbidity and mortality, endocrine disorders, acute cardiac and pulmonary conditions, and neurological disorders deserve particular scrutiny.

Not only can anxiety be a manifestation of medical illness, but it often occurs as a consequence of certain medical conditions. Chronic obstructive pulmonary disease in particular appears to lead to the development of anxiety disorders. Panic disorder and GAD are increased in patients with obstructive pulmonary disease. Panic disorder is also increased in patients undergoing lung transplantation. Other conditions include cardiomyopathy, which was noted to have an 83% prevalence in patients with panic disorder, and congestive heart failure or cancer. In the same study, 16% of postmyocardial infarction patients had panic disorder, significantly higher than the prevalence in the general population. Posttraumatic stress disorder is also increased in the months after patients have been admitted to a hospital for acute coronary syndromes as well as in many cases of traumatic injuries.

It is not always clear what came first, but clinical experience indicates that the medical condition precedes the development of anxiety in many cases. A prime example is patients with automatic implantable cardioverter defibrillators (AICDs). AICD shocks often result in feelings of nervousness and palpitations and trigger anticipatory anxiety regarding future shocks, which may lead to panic attacks and avoidance behavior. Indeed, some observers have viewed this as a kind of conditioning model for panic disorder.

Patients with various life-threatening conditions often experience intense anxiety and preoccupation and hypervigilance regarding somatic sensations. Patients with more aggressive brain tumors,
known brain or aortic aneurysms, or malignancies often experience intense anxiety in adapting to their illnesses. There are also reports of patients with brain lesions, caused either by tumors or trauma, in whom clinical signs reminiscent of obsessive-compulsive disorder have developed. In addition, specific circumstances, such as impending surgery, often trigger intense anxiety. Most observers note that preoperative education is often an effective antidote to excessive anxiety.

**Medication- or drug-induced anxiety**

Medication side effects are another common cause of anxiety symptoms in medical patients. The Table presents an overview of medications and other compounds that are more likely to induce anxiety. Some patients anticipate the negative effects of a new medication to such an extent that they experience a phenomenon referred to as the nocebo response.

<table>
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## Anxiety as an impersonator of medical illness

In primary care medicine, anxiety often presents in a disguised manner with somatic symptoms that appear to represent a medical illness and are interpreted as such by the patient. This presentation can arise for a variety of reasons, including social and cultural influences as well as psychological needs. Because there is persistent stigma associated with mental illness, it can often be more socially acceptable for physical rather than psychiatric symptoms to develop. Common somatic manifestations of anxiety, often associated with increased autonomic tone, include tachycardia, palpitations, sweating, flushing, dry mouth, dizziness, and tremor. Muscle tension, headaches, and fatigue, although less specific, are also common manifestations.

Many studies have demonstrated the high prevalence of anxiety disorders in primary care practice. Patients with anxiety disorders are particularly high users of medical care, not only in physicians' offices but also in emergency departments. Anxiety is especially prominent in patients who present with somatic patterns in poorly defined syndromes. Not surprisingly, patients with somatoform disorders, including hypochondriasis, somatization disorder, and somatoform pain disorder, have

| Antipsychotics | Amantadine | Levodopa |
| Nonprescription drugs | Caffeine | Decongestants (phenylephrine) |
| Illicit drugs | Cocaine | Ecstasy | Marijuana |
| Other | Corticosteroids | Estrogen | Indomethacin | Thyroid medications |

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Anxiety can enhance the production of pro-inflammatory cytokines, such as IL-6, which may lead to increased health risks. In addition, anxiety-induced changes in health-related states are overt, some are relatively hidden, such as social anxiety and obsessive-compulsive rituals. This is especially important for patients with pulmonary and cardiac disease, who are more likely to have anxiety disorders, as well as patients with poorly explained somatic complaints. The assessment should differentiate anxiety disorders from adjustment disorders with somatic amplification and sensitivity to anxiety are likely part of the somatization process.

 Anxiety and the course of medical illness
Anxiety can also worsen the course of a medical disease, increase health care use, impair function, lead to avoidance, and increase suffering. At one end of the spectrum, anxiety, like pain, is an adaptive response to threat. In many serious medical situations, anxiety prepares a person to identify and then deal more effectively with the real threat. However, when anxiety is excessive and causes dysfunctional behavior, it may complicate or accelerate the normal course of an illness. In the Medical Outcomes Study, primary care patients were monitored for 2 years. Those with comorbid anxiety and a medical condition had significantly poorer physical and emotional function. Data from the National Medical Expenditure Study showed that the presence of an anxiety disorder independently contributed 3.8 extra bed days in medically ill patients.

There are obvious clinical examples of patients with anxiety disorders who have difficulty in pursuing appropriate medical care. Patients with phobias relating to the medical world, such as fear of blood, needles, or doctors and dentists in general, avoid ordinary health maintenance. When circumstances finally force them into treatment, these patients often have medical conditions that may be far advanced and less remediable. It may be especially difficult for patients who need to inject themselves, such as those with diabetes mellitus. Persons with social phobias and discomfort may be reluctant to pursue needed care in the public setting of a hospital.

 Anxiety and vulnerability to medical illness
Whether anxiety disorders are associated with increased morbidity and mortality remains an intensely investigated question. An earlier study showed higher mortality in patients with anxiety disorders. More recent data have linked anxiety to an increased risk for mortality in cardiac patients. In men with coronary artery disease, phobic and panic-like anxiety predicted 3 times the risk for fatal coronary heart disease (CHD) at a 7-year follow-up compared with no anxiety. In the Normative Aging Study, which also included only men, higher levels of anxiety were associated with almost double the risk for fatal CHD. The cause of the increased mortality in these large-scale community studies appears to have been related to sudden cardiac death rather than myocardial infarction. In women who were homemakers, anxiety symptoms were associated with increased rates of myocardial infarction and coronary-related death over a 20-year period. In a more recent study, women who had increased anxiety had a higher mortality rate than otherwise healthy women.

Longitudinal data from a huge community-based sample of older men and women in the Netherlands with a 7.5-year follow-up revealed that in men, adjusted mortality risk was 1.78 in those who had anxiety disorders diagnosed at baseline. In this study, no significant association with mortality was found in women. The interesting sex differences are not well understood at present. Nonetheless, it is important to note that an anxious mood, regardless of its primary cause, can produce extensive effects throughout the body. The neurophysiology of anxiety involves not only an increase in sympathetic activity but also activation of the hypothalamic-pituitary-adrenal axis. The amygdala, locus caeruleus, and their connecting neurons trigger the sympathetic discharge of epinephrine and norepinephrine from the adrenal medulla and activate the hypothalamus and pituitary to increase adrenocorticotropic hormone (ACTH), prolactin, and human growth hormone. With the increase in ACTH, the adrenal cortex releases cortisol, inhibiting insulin and raising blood glucose. While these changes are not always clinically apparent, the possibilities for physiological abnormalities are numerous.

Possible mechanisms for higher mortality rates in patients with increased anxiety levels or, more generically, in patients with increased stress and life changes, include excessive sympathetic activation, neuroendocrine activation, platelet activation, and alterations in immune function. Anxiety can enhance the production of pro-inflammatory cytokines, such as IL-6, which may predispose patients to increased health risks. In addition, anxiety-induced changes in health-related behaviors, such as smoking or dietary indiscretion, may influence patients' health outcomes.

Implications for management of anxiety in the medical patient
There are 5 practical implications in assessing and managing anxiety in the medically ill. First, it is important to make the appropriate diagnosis and assessment. Although most anxiety states are overt, some are relatively hidden, such as social anxiety and obsessive-compulsive disorder. Clinicians need to ask patients directly about the presence of phobias, avoidance behavior, and compulsive rituals. This is especially important for patients with pulmonary and cardiac disease, who are more likely to have anxiety disorders, as well as patients with poorly explained somatic complaints. The assessment should differentiate anxiety disorders from adjustment disorders with...
anxiety. In many situations, anxiety may be adaptive and not excessive to the point of impairing a patient's coping capacity.

Second, as a general rule, anxiety often arises in situations in which people feel a lack of control. That may be particularly true in medical environments that are unfamiliar and frightening. Education and explanation about what the patient can expect tend to reduce anxiety. For many, the most effective preparation is geared to the patient's likely actual experience. Furthermore, one can alleviate anxiety by giving the patient as much control as possible, for example, by allowing a patient to take a break or to signal that a procedure has become overwhelming.

Third, simple acknowledgment of the patient's anxiety in an empathic way may help reduce it. One of the renowned psychiatric educators, the late Dr Elvin Semrad, summarized the essence of psychotherapy as helping a patient acknowledge, bear, and then put into perspective painful affects.

Fourth, judicious use of medications helps alleviate anxiety. Benzodiazepines are fast-acting, relatively safe, and effective, especially in acute situations. The exceptions to this include delirium and a history of substance abuse. Benzodiazepines are fast-acting, relatively safe, and effective, especially in acute situations. The exceptions to this include delirium and a history of substance abuse. The SSRIs and venlafaxine are particularly useful for patients with clear anxiety disorders, especially if there is evidence of comorbid depression. Among the SSRIs, sertraline and citalopram are often preferred because of their relatively smaller effect on P-450, an advantage for many medical patients who may be taking multiple medications.

Fifth, patients with anxiety disorders should be treated actively for their psychiatric condition. As already noted, comorbid psychiatric conditions are likely to exacerbate the course of many medical disorders. Most patients should also receive cognitive-behavioral therapy, which many studies have shown to be effective and underused in the treatment of anxiety disorders.

References:


Evidence-Based References

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