

The Interface



ASTHMA: Wheezing, Woes, and Worries

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This ongoing column is dedicated to the challenging clinical interface between psychiatry and primary care—two fields that are inexorably linked.

ABSTRACT

We examine the associations between asthma and mood and anxiety disorders and between asthma and trauma in childhood and adulthood. Our findings indicate that there is a higher-than-expected

prevalence of mood and anxiety disorders among asthmatics as well as a higher frequency of asthma among the traumatized. There are a number of potential confounds in these data, but we close with a proposed risk model.

INTRODUCTION

For many individuals, asthma is a chronic and potentially life-threatening disease. According to the Centers for Disease Control and Prevention (CDC), the lifetime prevalence of asthma in the US population is approximately 11 percent.¹ However, rates appear to be accelerating. A recent national surveillance report from the CDC indicates that between the years 1980 and 1996, the 12-month prevalence rate of asthmatic disease verifiably increased.² Given that approximately 1 in 10 Americans suffers from this sporadic lung dysfunction, we wondered if there were any interfacing clinical facets between asthma and psychiatry. In exploring this, we will first examine the evidence for possible relationships between asthma and mood and anxiety disorders. Then, we will review the available data on the relationships between asthma and psychological trauma, both in childhood and adulthood.

THE PREVALENCE OF MOOD AND ANXIETY DISORDERS IN ASTHMATICS

One approach to exploring a potential clinical interface between asthma and psychiatric phenomena is to examine whether particular Axis I disorders are over-represented in individuals who suffer from the disease. In our review of the literature, both mood and anxiety disorders clearly emerge as the predominant psychiatric syndromes associated with asthmatic disease.

Mood disorders in asthmatics.

A number of studies have examined the prevalence of mood disorders among individuals suffering from asthma. For example, Brown, Khan, and Mahadi examined 32 patients with asthma and found that 25 percent evidenced current major depression.³ Afari and colleagues

explored mood disorders among 50 outpatients with asthma and, in comparison with a national probability sample, found higher lifetime rates.⁴ Among 317 inner-city patients being treated for asthma, Goethe and colleagues found that 55 percent scored positively for depression.⁵ Using data from the World Mental Health Survey, investigators examined 18 population surveys from 17 countries (over 85

with attempts (ORc, 1.98; 95% CI, 1.42–2.76), but not suicidal ideation without attempts (ORc, 1.09; 95% CI, 0.81–1.45).

Finally, if mood disorders are genuinely over-represented in asthmatic probands, one would wonder about the corresponding rates of mood disorders in family members, as well. Wamboldt and colleagues examined this relationship in a clinical sample of 145 first-

and found that, compared with controls, the former had a significantly greater number of anxiety disorders.¹² Goodwin, Jacobi, and Thefeld explored anxiety disorders and their relationships to asthma among a German sample of more than 7,000 individuals.⁸ Current severe asthma symptoms were associated with a significantly increased likelihood of any anxiety disorder (OR, 2.65; 95% CI, 1.35–5.18). In an international study, Scott and colleagues found an association between asthma and the presence of any anxiety disorder.⁶ Finally, in a study of 82 children and adolescents, Vila and colleagues found that generalized anxiety disorder was the most common diagnosis among their asthmatic population and affected nearly 30 percent of participants.¹³

Panic disorder. In addition to any type of anxiety disorder, a number of studies have examined the prevalence of panic disorder in asthmatic populations. In the general population, the prevalence of panic

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thousand individuals) and found that depressive disorders were more frequent among those participants with asthma.⁶ In a Dutch sample of older adults, researchers found a statistical association between asthmatic disease and major depression.⁷ Finally, in a methodologically well executed German study, Goodwin, Jacobi, and Thefeld found that current asthma (non-severe) was clearly associated with an increased likelihood of an affective disorder (OR, 2.42; 95% CI, 1.03–5.72).⁸

Given the prevalence of mood disorders among individuals with asthma, one might wonder about whether there is a correspondingly higher rate in this population of suicidal ideation and/or suicide attempts. Examining data from the National Comorbidity Survey Replication study, Clarke and colleagues initially determined that 12 percent of the overall sample suffered from asthma.⁹ In further analyses, the researchers found a statistically significant association between asthma and suicidal ideation

degree relatives of asthmatic adolescents, and found a link between asthma and familial affective disorders.¹⁰

Anxiety disorders in asthmatics. In addition to the studies exploring mood disorders

In our experience, mood and anxiety disorders are the most common psychiatric syndromes encountered in chronic disease states. Thus, these psychiatric findings may not be specific to the asthma disease state, itself, but rather to chronicity.

among asthmatics, there are a number of studies that have examined relationships between asthma and various anxiety disorders.

Any anxiety disorder. Among 20 adult patients with brittle asthma, Garden and Ayres found that 35 percent evidenced a lifetime history of some type of anxiety disorder, compared to 15 percent of controls.¹¹ Bussing, Burket, and Kelleher examined 37 children with asthma

disorder is 4.7 percent.¹⁴ In a study of 93 asthmatics, Carr and colleagues found that 23 percent reported histories of panic attacks.¹⁵ In an Italian sample of adults, Perna and colleagues found higher rates of panic disorder than the rates encountered in the general population.¹⁶ Brown, Khan, and Mahadi found a prevalence rate for panic disorder of 16 percent in their sample of asthmatics.³ Finally, in a Brazilian sample, Nascimento and

colleagues reported a prevalence rate for panic disorder of 14 percent.¹⁷

DATA CONFOUNDS

The preceding data indicate that among various community and clinical populations of adolescent and adult patients with asthma, there appears to be a higher-than-expected prevalence rate of mood and anxiety disorders. However, these data must be interpreted with caution. First, in some studies, the diagnosis of asthma was based upon self-report. We do not know if these individuals genuinely suffered from asthma—a factor that could contribute to selection bias. Second, the presence of a chronic medical condition may partially explain the high rates of mood and anxiety disorders. In our

suggesting that asthma may function as a mediating variable. Any of these preceding factors could diminish a genuinely independent relationship between asthma, and mood and anxiety disorders.

From another perspective, the rates of psychiatric disturbance observed in these populations may actually under-represent the association between asthma and mood/anxiety disorders. Specifically, a number of these studies examined child and adolescent populations and report current prevalence rates. Given an increasing risk for mood and anxiety disorders with age, these studies may under-represent the ultimate findings that one would encounter in adults.

factors for the subsequent development of anxiety sensitivity, which may act as a contributory variable in the ultimate expression of mood and/or anxiety disorders.

While the literature in this area is relatively sparse, there are several elucidative studies. Most of these studies are based upon a similar methodology—the comparison among traumatized individuals of the actual versus expected frequencies of various medical disorders. For example, in a study of adolescents residing in Hong Kong, investigators surveyed more than 3,300 students regarding their exposure to corporal punishment at home. Corporal punishment, including being beaten for no reason and being beaten to the point of injury, was associated with a higher frequency of particular psychological and physical morbidities including asthma.¹⁹ In a study of 502 primary care patients with anxiety, investigators found a relationship between post-traumatic stress disorder and a number of medical problems including asthma.²⁰ Among a sample of women residing in New Zealand, investigators found that childhood sexual abuse was related to the presence of current asthma (i.e., the past 12 months) (OR, 2.25; 95% CI, 1.06–4.80).²¹ In a sample of Australian Vietnam veterans, O'Toole and Catts found that posttraumatic stress disorder was associated with a variety of illnesses including asthma.²²

Using a different methodological approach and in keeping with the preceding data, Potoczek and colleagues examined 97 patients with severe asthma for evidence of interpersonal loss.²³ In this sample, 80 percent reported the suffering and/or death of an individual whom they were emotionally close to. Likewise, in a 21-year longitudinal study, investigators explored relationships between asthma and

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experience, mood and anxiety disorders are the most common psychiatric syndromes encountered in chronic disease states. Thus, these psychiatric findings may not be specific to the asthma disease state, itself, but rather to chronicity. Third, the medications used in the treatment of asthma may partially explain the observed psychiatric findings. For example, corticosteroids can contribute to mood disorders; the Food and Drug Administration is currently investigating montelukast with regard to mood and behavioral changes, suicidal ideation, and suicide; and beta agonists may cause nervousness and simulate anxiety syndromes. Finally, family studies among asthmatics suggest a possible genetic predisposition to depression,

ASTHMA AND PSYCHOLOGICAL TRAUMA IN CHILDHOOD/ADULTHOOD

Given that mood and anxiety disorders appear to demonstrate a higher-than-expected association with asthmatic disease, is there any evidence that trauma histories are present in the lives of these individuals? If so, it is possible that trauma might function as yet another contributory or priming variable for mood and anxiety disorders. In support of this possibility, Ross and Wong discuss the role of anxiety sensitivity (i.e., one's potential susceptibility to anxiety symptoms), which they attribute to both genetics and the environment.¹⁸ They describe emotional and physical abuses in childhood as important etiological

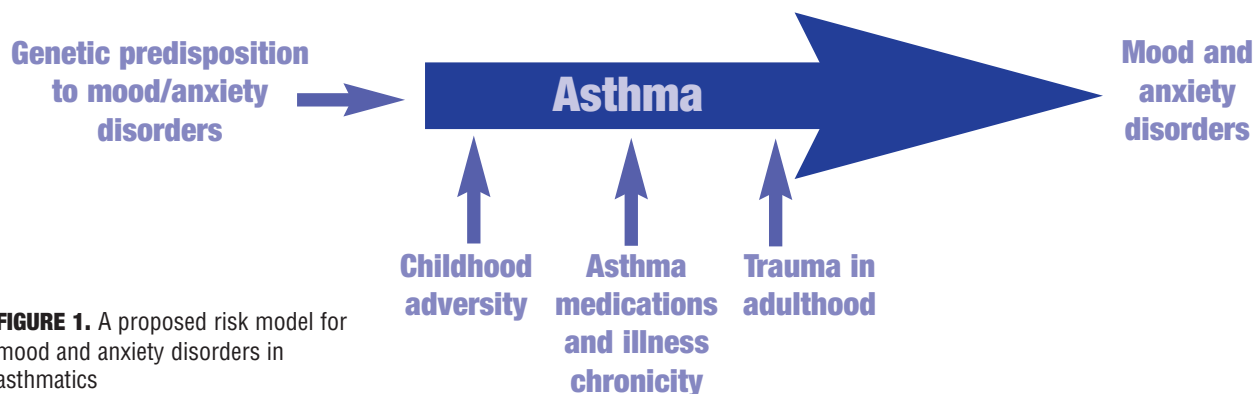


FIGURE 1. A proposed risk model for mood and anxiety disorders in asthmatics

mood and anxiety disorders; importantly, exposure to childhood adversity appeared to be an important mediating variable.²⁴

These scant preceding data suggest that, in some individuals, early-developmental and adulthood trauma have associations with asthmatic disease. So, in addition to genetics and medications, trauma may secondarily mediate the emergence of mood and anxiety disorders in patients with existing asthma.

A RISK MODEL

Like many psychiatric syndromes, a risk model is perhaps the most practical way to integrate these various data. At the outset, genetics (i.e., a positive family history of mood disorders and/or predisposition to anxiety sensitivity) contribute to the development of mood and anxiety disorders in patients with asthma. Then, childhood adversity and the effects of chronic illness may have mediating roles in conjunction with trauma in adulthood and the medications used in the treatment of asthma. This model is illustrated in Figure 1 and does not exclude other mediating or contributory variables.

CONCLUSION

In summarizing these data, it appears that individuals with asthma have a higher-than-expected rate of

comorbid mood and anxiety disorders. In our opinion, this is not an unexpected conclusion given our observation that mood and anxiety disorders appear to be commonly associated with chronic illness. However, there are also higher rates of mood disorders in the families of asthmatic individuals, suggesting a genetic predisposition—perhaps to both asthma and mood disorders. In addition, these prevalence rates may be mediated to some degree by the medications used in the treatment of asthma as well as trauma in either childhood or adulthood. Therefore, when evaluating individuals with asthma, we wish to stress the importance of exploring mood and anxiety disorders with special attention to a family history of mood disorders, a history of trauma in childhood or adulthood, and the potential role of medications. Clearly, this is a cohort of patients who are plagued by wheezing (asthma), woes (mood disorders), and worries (anxiety).

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