

# Emotional and psychiatric issues in hypertrophic cardiomyopathy and other cardiac patients

*Hipertrofik kardiyomiyopatili ve diğer kardiyak hastalarda emosyonel ve psikiyatrik sorunlar*

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## ABSTRACT

Hypertrophic cardiomyopathy (HCM) exposes young patients to the risk of sudden death. The risk of sudden death separates the young patient from his peers, but connects him more closely to his physician. The physician may have a powerful effect replacing uninformed fears with accurate knowledge, restoring hope, and helping the patient shift focus from the fear of dying to engaging in life and living with a medical illness. Depression and panic disorder are two psychiatric illnesses that are common in cardiac practices, cause significant morbidity and mortality, and may be overlooked and undertreated. Depression is a significant cardiac risk factor. Panic disorder may be confused with cardiac illness and complicate cardiac treatment. The cardiologist should recognize these illnesses and help patients who have them receive treatment for the psychiatric as well as the cardiac causes of their distress. There is a possibility that treating these psychiatric illnesses may actually improve cardiac outcome. Cardiac and psychotropic medications may have additive side effects or interact by altering drug metabolism. Many psychotropic medications cause orthostatic hypotension that may worsen obstructive HCM. (*Anadolu Kardiyol Derg 2006; 6 Suppl 2: 5-8*)

**Key words:** Behavioral medicine, hypertrophic cardiomyopathy, sudden cardiac death, medical psychology, psychosomatic medicine, depressive disorder, panic disorder, drug interactions

## ÖZET

Hipertrofik kardiyomiyopati genç hastaları ani ölüm riskine karşı korunmasız kılmaktadır. Ani ölüm riski ise genç hastayı yaşlılarından uzak tutmakta ama hekimi ile daha yakın bağların kurulmasını sağlamaktadır. Bilgisiz korkuların doğru bilgi ile değiştirilmesinde, ümidin yeniden kazanılmasında, hastanın ilgisini ölüm korkusundan hayata tutunma ve hastalık ile yaşamaya kaydırılmasında hekimin çok güçlü etkisi olabilir. Kardiyak pratikte en çok rastlanan iki psikiyatrik hastalık, depresyon ve panik bozukluk önemli morbidite ve mortaliteye neden olmakla birlikte gözden kaçabilir ve yeterli tedavi edilemeyebilirler. Depresyon çok önemli bir kardiyak risk faktörüdür. Panik bozukluğu ise kalp hastalıkları ile karıştırılabilir veya kardiyak tedavilerde komplikasyona neden olabilir. Kardiyolog bu hastalıkları tanıması ve hastalarının psikiyatrik patoloji ve distreslerinin kardiyak nedenlerinin tedavi edilmesinde yardımcı olması gerekmektedir. Bu psikiyatrik bozuklukların tedavi edilmesi aslında kardiyak hastalığın sonucunu iyileştirme olasılığı vardır. Kardiyak ve psikotropik ilaçlar aditif yan etkileri ve metabolizma etkileşmesi de olabilir. Birçok psikotropik ilaç ortostatik hipotansiyona neden olmaktadır, bu durum da obstrüktif hipertrofik kardiyomiyopatisinin kötüleşmesine neden olabilir. (*Anadolu Kardiyol Derg 2006; 6 Özel Sayı 2: 5-8*)

**Anahtar kelimeler:** Davranışsal hekimlik, hipertrofik kardiyomiyopati, ani kardiyak ölüm, medikal psikoloji, psikosomatik hekimlik, depresif bozukluk, panik bozukluk, ilaç etkileşimleri

## Hypertrophic Cardiomyopathy, Emotions, and the Doctor

Patients with hypertrophic cardiomyopathy (HCM) have less physical disability and more psychiatric disability than patients with other severe cardiac illnesses (1). Hypertrophic cardiomyopathy exposes young patients to the risk of sudden death. The young HCM patient's mental state relies on plans for

the future that the risk of sudden death places in doubt. A young person's self-esteem depends on what he hopes to accomplish. Anticipating future consequences may restrain youthful impulses. Family plans are important to young couples. Place the future in doubt and self-esteem may be lost, judgment compromised, and relationships destabilized.

The risk of sudden death from HCM separates the young patient from his peers, but also leaves him more connected

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with his doctor. A thoughtful physician, who is calm, problem solves, and is not caught up in the patient's immediate, often frightening, fantasies is a powerful support. The physician may replace uninformed fears with accurate knowledge, restore hope, and help the patient shift his attention from the fear of dying to living with a medical illness. As the physician helps the patient learn about his illness, the physician models skills the patient can use for himself and to help others be more comfortable with his illness. Some patients may find that planning for the impact of uncertainty on their health, assets, and family helps them feel more connected to the future.

For many patients, awareness of mortality brings renewed focus on what they want out of life, whom and what they care for, balancing short and long term goals, and making each moment count. The Hypertrophic Cardiomyopathy Association, [www.HCMA.org](http://www.HCMA.org), is a support group for HCM patients. The Hypertrophic Cardiomyopathy Research Foundation, [www.hcmresearchfoundation.org](http://www.hcmresearchfoundation.org), is another valuable resource.

### Psychiatric Illness Complicating Cardiac Illness

Psychiatric illnesses are common and occur commonly during other medical conditions. The most common psychiatric illnesses include disorders of mood, anxiety, substance use, and personality. Two psychiatric illnesses are especially important to cardiologists, depression and panic disorder.

Depression (2) may be low grade and enduring or episodic and intense. A major depressive episode is a period of depressed mood, most of the day, nearly every day, or a period of markedly diminished interest or pleasure in all or almost all activities, for at least two weeks when accompanied by significant changes in sleep, appetite, energy, concentration, psychomotor pace, self-esteem, and thoughts of death (Table 1). Depressions have significant comorbidity with other psychiatric illness (50%), including alcohol or drug problems (5%), panic disorder (15%), and generalized anxiety disorder (35%). The prevalence of depression is 6% in primary care practice, 14% in hospitalized patients, and 40-65% in patients after myocardial infarction. Depression is a recurrent problem. The chance of recurrence is 50% after the first episode, and 75% after a second episode.

Depressions should be treated even if there is a known stress that might be causing the depression. You would not leave a broken leg untreated because a known trauma produced the fracture. It is also important to treat the diagnosis, not the symptom alone. You would not treat chest pain with pain medication and ignore the possible underlying cardiac illness. A common error is to identify the sleep disturbance or anxiety symptoms associated with a depression and treat them without recognizing or treating the underlying depression that may progress untreated. You should consider depression whenever a patient complains of poor sleep or anxiety.

Major depressive disorder and depressive symptoms are risk factors for the development of coronary heart disease (CHD) in healthy patients, for recurrent events in patients with established CHD, for adverse cardiovascular outcomes after coronary artery bypass graft, for the development of congestive heart failure (CHF), and for adverse outcomes in patients with CHF (3). Taylor et al (4) studied whether treating depression improves cardiac survival after myocardial infarction (MI). Prospectively, cognitive behavioral psychotherapy improved the depression but not the cardiac illness. Patients with severe or treatment resistant depression were given antidepressant medication. These more depressed patients treated with antidepressants had fewer recurrent infarctions, 21.5% vs. 26%, over the next 39 months according to a complex retrospective analysis.

Depression may be treated with psychotherapy or antidepressant medication (2). Whooley (3) provides a more detailed discussion for internists. Educational materials for patients may be obtained from the National Institute of Mental Health ([www.nimh.nih.gov/healthinformation/depressionmenu.cfm](http://www.nimh.nih.gov/healthinformation/depressionmenu.cfm)). Many patients do not recover fully. Incompletely recovered patients are at greater risk of relapse. Patients should be referred to a psychiatrist who is expert in the treatment of depression if the depression is severe, if there is suicidal risk, a personal or family history of manic depressive illness, comorbid conditions, agitation, treatment resistance, for help evaluating medication issues, or for more complete treatment.

Panic disorder is another psychiatric condition of special

**Table 1. Diagnostic Criteria for Major Depressive Episode**

<p>Five (or more) criteria should be present nearly every day over at least two weeks. 1 or 2 must be present</p> <ol style="list-style-type: none"> <li>1. Depressed mood most of the day. In children or adolescents, can be irritable mood.</li> <li>2. Markedly diminished interest or pleasure in almost all activities most of the day.</li> <li>3. Significant (e.g., 5%/month) weight change when not dieting or change in appetite nearly every day. In children, consider failure to make expected weight gains.</li> <li>4. Insomnia or Hypersomnia.</li> <li>5. Psychomotor agitation or retardation, observable by others.</li> <li>6. Fatigue or loss of energy.</li> <li>7. Feelings of worthlessness or excessive or inappropriate guilt (not merely self-reproach or guilt about being sick).</li> <li>8. Diminished ability to think or concentrate, or indecisiveness.</li> <li>9. Recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation, or a specific plan, or a suicide attempt.</li> </ol> <p>The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning. The symptoms are not due to the effects of a substance (e.g., a drug of abuse or medication), a general medical condition (e.g. hypothyroidism), another psychiatric diagnosis, or bereavement.</p>
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(Modified from reference 2)

interest to cardiologists. Panic disorder is diagnosed when there are recurrent panic attacks and at least a month of concern about having additional attacks, worry about the implications of the attack, or agoraphobia (Tables 2, 3, 4). A panic attack is a sudden discrete attack of anxiety in the absence of real danger, peaking within 10 minutes of onset, and associated with palpitations, sweating, trembling, shortness of breath, choking, chest pain, nausea, dizziness, derealization, fear of dying, fear of losing control, paresthesias, or flushing (Table 3). Many panic disorder patients are seen in emergency rooms and evaluated for myocardial infarction. Commonly, but not with diagnostic specificity, panic attacks occur in confining conditions away from home. The prevalence of panic disorder is 0.2-2% in the general public and 10-60% in medical patients. There is a 90% lifetime comorbidity with other psychiatric diagnoses. Sixty-five percent of panic disorder patients also have depression during their lifetime (2).

Panic disorder can masquerade as or coexist with cardiac disease. Dammen et al (5) studied 200 patients in an outpatient cardiology unit, referred for chest pain evaluation, with no prior cardiac history. Overall, 37% of these patients had panic disorder and 34% had coronary disease. Untreated panic disorder runs a chronic course, causes significant morbidity, is associated with an increased risk of suicide, and often results in repeated visits to emergency services. Unfortunately, panic disorder patients may receive a cardiac evaluation that is negative, receive no cardiac treatment, and come away with the incorrect conclusion that there is no treatment for their disease. It is important to explain that there are treatable psychiatric conditions that cause panic attacks and to refer the patient for an appropriate evaluation.

Panic Disorder may be treated with psychotherapy or medication (2). As with depression, it is important to choose a medication considering the likelihood of interactions, the patient, and his situation. Katon (6) provides a more detailed discussion of panic disorder for internists. Educational materials for patients may be obtained from the National Institute of Mental Health ([www.nimh.nih.gov/healthinformation/anxiety/menu.cfm](http://www.nimh.nih.gov/healthinformation/anxiety/menu.cfm)). Patients should be referred to a psychiatrist expert in the treatment of panic disorder for severity, suicide risk, comorbid conditions, treatment resistance, and continuing or deeper treatment.

## Medications

There are interactions between medications used for HCM and psychotropic medications including but not limited to the following (7). Antidepressants vary in the degree to which they inhibit the enzyme 3A4 that metabolizes verapamil, or 2D6 that metabolizes propranolol (7). Among the serotonin specific reuptake inhibitors citalopram and sertraline may be less likely to inhibit these enzymes than other antidepressants (3), but patients should still be closely monitored for possible interactions. Fluoxetine is more likely to have significant interactions, but its long half-life makes it less likely to produce withdrawal symptoms if treatment is interrupted or unreliable due to patient or other factors.

Verapamil levels may be increased by fluoxetine, trazodone, nefazodone, imipramine, and buspirone. St. John's Wort (*hypericum perforatum*) is a non-prescription remedy some people take for depression that may reduce verapamil levels. The-

**Table 2. Diagnostic Criteria for Panic Disorder with or without agoraphobia Both 1 and 2**

1. Recurrent unexpected panic attacks.
2. At least one attack has been followed by at least one month of (a) persistent concern about having additional attacks or (b) worry about the implications of the attack (e.g. losing control, having a heart attack, "going crazy").
Not due to a substance, general medical condition, or better accounted for by another mental disorder.
(Modified from reference 2)

**Table 3. Panic Attack**

A discrete period of intense fear or discomfort in the absence of real danger that develops abruptly, reaches a peak within 10 minutes and is accompanied by four (or more) of the following: A. Palpitations or accelerated heart rate. B. Sweating. C. Trembling. D. Sensation of shortness of breath. E. Feeling of choking. F. Chest pain or discomfort. G. Nausea or abdominal distress. H. Feeling dizzy or faint. I. Feelings of unreality or being detached from oneself. J. Fear of losing control or going crazy. K. Fear of dying. L. Paresthesias (Numbness or tingling). M. Chills or hot flushes.
(Modified from reference 2)

**Table 4. Agoraphobia**

A. Anxiety about being in places or situations from which escape might be difficult or embarrassing or in which help may not be available in the event of a panic attack, typically involving situations such as being outside the home, in a crowd, standing in a line, being on a bridge, or traveling in a motor vehicle.
B. The situations are avoided or endured with marked distress or worry about having a panic attack. Confronting situations is aided by the presence of a companion.
(Modified from reference 2)

re are varied interactions between lithium and verapamil including bradycardia, lithium toxicity, and reduced lithium levels with recurrent symptoms of mania. Levels of the antianxiety agent buspirone are increased by verapamil.

Propranolol levels may be increased by serotonin specific reuptake inhibitors and neuroleptics like chlorpromazine, haloperidol, and thioridazine. Interactions are less likely with atenolol. Disopyramide may interact with psychotropic medications that prolong the QT interval including the neuroleptics thioridazine and ziprasidone.

Many psychotropic medications cause orthostatic hypotension that may reduce diastolic LV volume on standing and worsen obstructive HCM. These include the tricyclic antidepressants, monoamine oxidase inhibitors, other antidepressants and many neuroleptics. Checking for orthostatic hypotension is a valuable bedside measurement that is often overlooked under pressure of time.

## References

1. Cox S, O'Donoghue AC, McKenna WJ, Steptoe A. Health related quality of life and psychological wellbeing in patients with hypertrophic cardiomyopathy. *Heart* 1997; 78: 182-7.
2. First MB, Tasman A. DSM-IV TR, Mental Disorders: Diagnosis, Etiology, and Treatment. Hoboken, New Jersey, USA: John Wiley & Sons, Inc.; 2004.
3. Whooley MA. Depression and cardiovascular disease: healing the broken hearted. *JAMA* 2006; 295: 2874-81.
4. Taylor CB, Youngblood ME, Catellier D, Veith RC, Carney RM, Burg MM, et al. Effects of antidepressant medication on morbidity and mortality in depressed patients after myocardial infarction. *Arch Gen Psych* 2005; 62:792-8.
5. Dammen T, Arnesen H, Øivind E, Friis S. Psychological factors, pain attribution and medical morbidity in chest-pain patients with and without coronary artery disease. *General Hospital Psychiatry* 2004; 26: 463-9.
6. Katon WJ. Panic disorder. *N Engl J Med* 2006; 354: 2360-7.
7. Tatro D, editor. *Drug Interactions Facts on Disc*. St. Louis: Facts and Comparisons; 2005.