

CASE STUDY

Depression after Cardiac Transplant Treated with Interpersonal Psychotherapy and Paroxetine

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This case study discusses the treatment of a 67-year-old man with no prior history of psychiatric illness diagnosed with major depression following cardiac transplantation. Shortly after surgery, the patient demonstrated depressive symptoms, including weight loss, emotional instability, and social isolation. Psychiatric consultation revealed that the patient first experienced these symptoms after learning that the donor heart he had received belonged to a woman. The patient had preconceived, stereotypical ideas that a woman's heart would inhibit his physical recovery and transform him into a more emotional man. The patient was prescribed the selective serotonin reuptake inhibitor paroxetine and began interpersonal psychotherapy. Results from this case study indicate that treatment with paroxetine, combined with interpersonal psychotherapy, may be successful in treating patients who had transplants and suffer from postsurgical depression.

INTRODUCTION

Heart transplantation has become a common treatment option for patients with certain forms of serious heart disease (1). According to the American Heart Association, 2,340 heart transplants were performed in the United States in 1998. Survival rates continue to increase, with patients having an 83% chance of surviving the first year and a >50% chance of surviving 10 years (2). Although the health and quality of life of a patient improves after receiving a transplant, emotional, social, and occupational problems may follow.

The literature suggests that depression is a significant posttransplant issue (1-7). A study conducted by Dew and colleagues investigated de-

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pressive and anxiety-related disorders in patients at one year after transplant. A total of 154 patients were studied; at twelve-month follow-up, 17% of patients had major depression, 14% had posttraumatic stress disorder related to the transplant, and 10% had various types of adjustment disorders (2). Dew and colleagues also investigated patients at three years after transplant, and the percentages increased to 25% of patients suffering from major depression, 20% from adjustment disorders (17% of these patients had anxiety), and 17% from posttraumatic stress disorder (8). It is estimated that up to 58% of heart-transplant patients are diagnosed with some form of depressive disorder, often requiring pharmacologic intervention (2, 7).

The amount of information with regard to pharmacologic treatment of depression in patients with heart transplants is limited. A brief communication from Wright and colleagues discussed a significant drug-drug interaction between the antidepressant nefazodone and cyclosporine, in which nefazodone caused a significant increase in cyclosporine levels (low 100's ng/mL vs 775 ng/mL) (7). Another study by Kay and colleagues investigated a group of nine heart-transplant patients diagnosed with depression and treated with tricyclic antidepressants. Of these nine patients, seven were successfully treated with tricyclic antidepressants and two discontinued use due to noncardiac adverse effects of the medication (4).

The following case study will discuss the successful treatment of a patient who developed major depression shortly after a heart transplant. Treatment included the selective serotonin reuptake inhibitor (SSRI) paroxetine and interpersonal psychotherapy.

CASE STUDY

Mr. P., a 67-year-old man, had received a heart transplant for end-stage arteriosclerotic heart disease. Up until his massive myocardial infarction (MI), Mr. P. worked as a foreman for a painting crew. He also saw himself as an athlete and played competitive softball. After his MI, however, Mr. P. was unable to work, and he could only watch his team play softball and take short walks for exercise. His cardiac status deteriorated from an ejection fraction of 19% to 4% over the two-year period after the MI. Mr. P. recalled knowing he was going to die from his failing heart and was prepared to accept his fate. He was aware of the possibility of receiving a heart transplant, but he did not expect a donor heart to be found in time to save his life. However, as his cardiac status declined further to near-bedridden status, Mr. P. was notified that a donor heart had been located,

and he was prepared for transplant surgery within six hours. Mr. P. did well during the surgery and recuperated with no postoperative complications.

A psychiatric consultation was sought four months after cardiac transplantation for severe depressive symptoms, irritability, and failure to rehabilitate. Mr. P. had no history of depression or substance abuse, and there was no history of psychiatric illness in his family. His primary care physician referred him for psychiatric consultation after prescribing paroxetine 20 mg/d for two weeks.

On examination, it was apparent that Mr. P. suffered from major depression; he had experienced a 30-lb weight loss, frequent crying spells, poor motivation, anergia, anhedonia, social isolation, irritability, and a sense of hopelessness and helplessness. He denied suicidal ideation but admitted that he often wished that he had died instead of having the transplant. Mr. P.'s wife accompanied him on one appointment and expressed her frustration about not being able to convince him to venture out, socialize, or travel to see their grandchildren. She said he merely watched television all day with a passive attitude, never laughed, and frequently burst into tears.

Mr. P. was treated with paroxetine 20 mg/d as prescribed by his primary care physician for two weeks with no adverse effects but no improvement in his symptoms. The dosage was, therefore, increased to 30 mg/d. A clinical pharmacologist was contacted to rule out any potential adverse interaction with paroxetine and Mr. P.'s antirejection medications (Table I). A review of Mr. P.'s other medications revealed that none contributed to his depression, and his thyroid function was normal.

Table I. MR. P'S DRUG REGIMEN

Drug	Schedule
ProGraf	1 MCM Caps, morning and evening
Toprol XL	100 mg, morning and evening
Accupril	40 mg, morning and evening
Azathioprine	50 mg, 2 caplets in morning
Prilosec	20 mg, once daily
MAG-OX-400	400 mg, morning and evening
Miacalcin spray	200 I.U. Dose, 1 spray
Alprazolam	0.25 mg as needed
Diltiazem	60 mg, morning and evening
Paroxetine	30 mg daily

From a psychotherapy point of view, Mr. P. seemed to be struggling most prominently with the fact that his heart donor was female. Even though, in general, transplant policy does not divulge personal details of the donor, Mr. P. had heard "through the grapevine" that his donor was a young woman who had died in a motor-vehicle accident.

With further exploration, it became apparent that Mr. P. had assumed that the heart transplant would give him a new lease on life, which to him meant a return to his original athletic prowess. Upon learning that his donor was "a lady," Mr. P. entered, according to his description, a state of cognitive dissonance. The possibility of a female donor had never occurred to him and he had been totally unprepared for the eventuality. His stream of thought led him to the disappointing conclusion that he would not regain his former athletic prowess because his transplanted heart was female. To make matters worse, Mr. P.'s peers teased him about being converted to a "softhearted" kind of guy. His ensuing depressive symptoms, such as being brought to tears by various television shows, confirmed his belief that the heart transplantation had converted him into a "sentimental female," which was the opposite of what he had hoped to be restored to—a strong, unemotional, athletic man like his peers at work, in his neighborhood, and on his softball team.

A strategy for interpersonal psychotherapy was devised to help him cope with the changed emotional reactions. Mr. P. had no prior experience with psychotherapy and was afraid that his friends would think of him a weak person or crazy for seeing a psychiatrist. Despite these reservations, he agreed to attend weekly sessions.

During the initial sessions, Mr. P. was diplomatically confronted with his stereotyped views of the capabilities of a heart from a female donor. He was reminded of the accomplishments of female Olympic contestants and how the differences between females and males involved many other factors, such as hormonal effects during development and family and cultural expectations. Mr. P. could agree that his development had been unequivocally male, and that there was no impetus for changing that fact, despite receiving a woman's heart. Furthermore, the concept of sentimentality and shedding tears at moments of television pathos were explored as sensibilities that can occur in both men and women. Mr. P. agreed that the emotional impact of events was technically a function of the brain and not the heart and, as we had pointed out, these emotions were frequently exacerbated in intensity by depression. He was reminded that the beating heart is technically a pump made of muscle that might speed up in rate

when excited by something the brain interprets as exciting, upsetting, or sentimental. Mr. P. pondered these concepts between visits.

From an intervention point of view, one "catch-22" for Mr. P. was his self-imposed isolation due to his tendency to break into tears frequently. Mr. P. feared that if a friend or acquaintance asked him about his transplant experience, his eyes would well up with tears, he would be seen as a changed man, and he would be deeply embarrassed. This resulted in Mr. P. feeling stuck, unhappy with his life, and hopeless. This problem was attacked by developing a challenge for rehabilitation and a strategy for interacting with friends.

Now that Mr. P. accepted the concept of the heart as a muscle, the next step was to strengthen it with exercise. A program of graded walking was developed to see how far his stamina could be built up. Mr. P. was challenged to test his "lady's heart" by judiciously "putting it through the paces." Invoking a "training camp" metaphor worked particularly well given Mr. P.'s long-held wish to be restored to his original athleticism. After a cautious start, Mr. P. began to see progress and gained confidence that his strength and endurance were improving. A further benefit of his walks was the frequent encounters with people he knew in his neighborhood, which provided some social contact and reduced his self-imposed social isolation.

Regarding his fear of appearing to be overemotional in social situations, considerable time was spent rehearsing possible responses, such as "Thanks for asking, I'm doing all right, but I'm rather tired of discussing it all, if you don't mind." These responses helped to bolster Mr. P.'s confidence that he could control the interaction and not expose himself to strong emotions that he found embarrassing.

After six weeks of treatment with paroxetine and psychotherapy sessions, Mr. P. showed marked improvement. He was walking two miles daily and eating heartily. With the increased exposure to his friends, a saturation point for their curiosity was eventually reached, and they stopped asking questions and even seemed to forget that he had undergone a heart transplant. The treatment with paroxetine helped to reduce his crying tendencies, and overall, his symptoms of depression greatly improved. There were no adverse effects associated with paroxetine treatment, and due to his obvious response, the 30 mg dosage of paroxetine was determined to be adequate. After six therapy sessions, Mr. P. felt improved to the point where termination was possible, and he was referred back to his primary care physician with a recommendation for continuing treatment with paroxetine for twelve additional months.

At one-year telephone follow-up, Mr. P. reported that he was continuing to take paroxetine, now reduced to 20 mg/d as prescribed by his primary care physician. When asked about his softball team, he reported that none of his old teammates still played as they were "dying off, overweight, or smoking too much." He denied having any depressive symptoms and was walking, riding a stationary bike, and using a punching bag for 50 minutes daily. Mr. P. no longer questioned the adequacy of his transplanted "lady's heart." He was also planning a second trip to visit family in a distant city.

DISCUSSION

In this case study, the SSRI paroxetine was successful in treating depression in a patient with a heart transplant, with no significant adverse effects or drug-drug interactions. In my experience, SSRIs are particularly useful for the frequent crying episodes associated with depression.

Psychotherapy was added to treatment with paroxetine because, while medication alone would have been expected to improve his vegetative symptoms, it was not likely to affect his preconceived attitudes and disappointed expectations for cardiac transplantation. The personalized meaning of the transplant for Mr. P. was at odds with his expectations, which made him feel stuck, maintained his depression, and led to self-imposed social isolation. Interpersonal psychotherapy helped Mr. P. to "reframe" his cardiac-transplant experience into one he could accept.

Reynolds and colleagues report a 78.9% success rate in treating depression in late life with combined pharmacotherapy-psychotherapy, which exceeds the usual 50%-60% response rate for antidepressants in controlled trials (9). Interpersonal psychotherapy is a short-term psychotherapy that focuses on the experience of depression in the context of interpersonal relationships (10, 11). Problem areas are categorized into four main groups: grief, role-transition, role dispute, and interpersonal deficit (10, 11). After obtaining a thorough history and an inventory of important interpersonal relationships, a focus of role transition was chosen in Mr. P.'s case. By utilizing techniques of clarification, confrontation, communication analysis, and decision analysis, psychotherapy helped to reframe Mr. P.'s problem, to enlist his participation in an exercise program, and enable him to exert control over the interpersonal interactions he was avoiding prior to treatment. The net effect of these interventions successfully challenged Mr. P.'s preconceptions that a female heart limited his "return to manhood" (as he defined it), allowed him to initiate a plan

for physical rehabilitation, and restored his confidence to resume interpersonal relationships with friends and acquaintances.

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REFERENCES

1. Mai FM (1993). Psychiatric aspects of heart transplantation. *British Journal of Psychiatry*, 163, 285-292.
2. Dew MA, Roth LH, Schulberg HC, et al. (1996). Prevalence and predictors of depression and anxiety-related disorders during the year after heart transplantation. *General Hospital Psychiatry*, 8(6 Suppl), 48S-61S.
3. Jones ER, Jr. (1991). Cardiac transplantation and depression [letter]. *American Journal of Psychiatry*, 148, 1271.
4. Kay J, Bienenfeld D, Slomowitz M, et al. (1991). Use of tricyclic antidepressants in recipients of heart transplants [see comments]. *Psychosomatics*, 32, 165-170.
5. Mai FM, McKenzie FN, Kostuk WJ (1990). Psychosocial adjustment and quality of life following heart transplantation. *Canadian Journal of Psychiatry*, 35, 223-227.
6. McAlcer MJ, Copeland J, Fuller J, Copeland JG (1985). Psychological aspects of heart transplantation. *Journal of Heart Transplantation*, 4, 232-233.
7. Wright DH, Lake KD, Bruhn PS, Emery RW, Jr. (1999). Nefazodone and cyclosporine drug-drug interaction. *Journal of Heart and Lung Transplantation*, 18, 913-915.
8. Dew MA, DiMartini AF, Switzer GE, et al. (2000). Patterns and predictors of risk for depressive and anxiety-related disorders during the first three years after heart transplantation. *Psychosomatics*, 41, 191-192.
9. Reynolds CF, 3rd, Frank E, Perel JM, et al. (1999). Nortriptyline and interpersonal psychotherapy as maintenance therapies for recurrent major depression: A randomized controlled trial in patients older than 59 years [see comments]. *Journal of the American Medical Association*, 281, 39-45.
10. Markowitz J (1998). *Interpersonal psychotherapy*. Washington, DC: American Psychiatric Press.
11. Weissman MM, Markowitz JC, Klerman GL (2000). *Comprehensive guide to interpersonal psychotherapy*. New York: Basic Books.