Anxiety and Depression in Ischeamic Heart Disease

Archana A. Pandya and Yogesh A. Jogsan

ABSTRACT

The present study was attempted to study the anxiety and depression on ischeamic heart disease (IHD) than the normal population. The purposive sampling method was adopted to select the sample. The sample was consisted of 100 subjects with ischeamic heart disease (IHD) patients (n = 50) and normal population (n = 50), (both males and females) was selected from different hospitals represented from Rajkot and Ahemdabad. The tools used were Beck Depression Inventory, State Trait Anxiety Inventory, General Stress Index and General Health Scale. The study found that there was significant difference between ischeamic heart disease (IHD) patients and normal population in depression, state anxiety, general stress, and general health. It was also found that there was significant difference in depression, state anxiety, general stress, quality of life, general health, and life events among the three groups viz., first ischeamic episode, second ischeamic episode, and three or more ischeamic episode.

INTRODUCTION

The idea that anxiety, depression, general stress and general health may contribute to the cause of heart disease is not a new concept. Depression and anxiety are closely interrelated to enhance a ischeamic heart disease (IHD). Compared with the general population, individuals suffering from depression have an increased risk is highest in the presence of concomitant cardiovascular disease (Wulsin, Vaillant, & Wells 1999; Aromaa, Raitasalo, Reunanen, Impivaara, Helivaara, Knekt, Lehtinen, Joukamaa, & Maatela, 1994). Good evidence indicates that clinical depression is an independent risk factor for the development of coronary artery disease, (Ford, Mead, Chang, Cooper Patrick, Wang, & Klag, 1998; Barefoot & Schroll, 1996) and equally compelling evidence indicates an association between anxiety and coronary artery disease (Kubzansky, Kawachi, Weiss, & Sparrow, 1998). It is not yet known whether patients with more severe depression develop more severe cardiovascular disease, but there are data showing that patients with more severe anxiety develop more severe cardiovascular disease.
Depression is not only a risk factor for cardiovascular disease but is also a strong predictor of mortality in patients with manifest ischeamic heart disease (Ford et al., 1998). So, there is need for identifying anxiety and depression in the clinical practice that primary care physicians will consider risk factors for ischemic heart disease when evaluating patients. There is a clear consensus that depression and anxiety are currently under-diagnosed in cardiac patients by cardiologists and primary care physicians alike. A possible reason for the low rate of detection is uncertainty among physicians about how to manage these disorders in cardiac patients if the disorders were identified.

There is need for psychological intervention to manage and control the symptoms of anxiety and depression in cardiovascular diseases in each and every cardiology units.

**Objective of the Study**
- To study of the Anxiety in ischemic heart disease patients and normal population.
- To study the Depression in ischemic heart disease patients and normal population.

**Hypotheses**
1. There will be significant difference between the ischemic heart disease (IHD) patients and normal population
2. There will be significant differences among the three groups, viz., subjects with first ischemic episode, second ischemic episode, and three or more ischemic episode for the variables under study.

**METHOD**

**Tools**

**Beck Depression Inventory** (Laiju & Sanada Raj, 2002), is a 21-item test presented in multiple-choice format which purports to measure presence and degree of depression in adolescents and adults. For the present study, Beck Depression Inventory was used. Each of the Anxiety and Depression inventory items corresponds to a specific category of depressive symptom and attitude. The reliability of the test was found to be 0.88 and validity was found to be 0.92.

**State-Trait Anxiety Inventory** (Mohandas & Vinodkumar, 1994). The split-half reliability for State anxiety was found to be 0.89 and for trait anxiety was 0.79. The validity of 0.84 for state anxiety and 0.86 for trait anxiety **General Stress Index** (Laiju & Sanada -Raj, 2002). The reliability was found to be 0.83 and validity was 0.74.

**General Health Scale** (Laiju & Sanada Raj, 2002). It consists 28 items with 4 subscales and the variables aims to are somatic symptoms, anxiety and insomnia, social dysfunctions, and severe depression. Reliability was 0.94 and validity was found to be 0.82.

**Sample**

The purposive sample consisted of 100 subjects, with ischemic heart disease patients (IHD) patients (N=50) and normals measure (N = 50) between the age group of 35 and 65 years including both males and females belonging to different socioeconomic status. For the investigation, data were
collected from the ischemic heart disease (IHD) patients. For the normal population (N=50) from both male and female.

Procedure

Patients were individually contacted at the hospital and all the measures were taken by grouping them in a group of 20 to 25 patients. They were provided all the necessary instructions before hand and were told that their responses would be kept confidential.

Research Design

In this research, two tests were administered at a place, where there was no or minimum distraction so as to facilitate the subjects in filling up the test questionnaires.

The test instructions were read out and explained to the subjects and they were allowed to ask questions if they have any; while the data collection was completed, then ‘t’ test used to check the significance difference.

RESULTS AND DISCUSSION

Table 1: Mean, SD and t-value for the IHD patients and normals

<table>
<thead>
<tr>
<th>Variables</th>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>IHD patients</td>
<td>36.68</td>
<td>8.7048</td>
<td>23.503*</td>
</tr>
<tr>
<td></td>
<td>Normals</td>
<td>4.78</td>
<td>4.0421</td>
<td></td>
</tr>
<tr>
<td>State Anxiety</td>
<td>IHD patients</td>
<td>64.06</td>
<td>7.5847</td>
<td>21.931</td>
</tr>
<tr>
<td></td>
<td>Normals</td>
<td>29.441</td>
<td>8.1895</td>
<td></td>
</tr>
<tr>
<td>Trait Anxiety</td>
<td>IHD patients</td>
<td>49.18</td>
<td>6.586</td>
<td>1.013</td>
</tr>
<tr>
<td></td>
<td>Normals</td>
<td>47.52</td>
<td>9.303</td>
<td></td>
</tr>
<tr>
<td>General Stress</td>
<td>IHD patients</td>
<td>39.44</td>
<td>6.354</td>
<td>11.252*</td>
</tr>
<tr>
<td></td>
<td>Normals</td>
<td>24.46</td>
<td>6.9465</td>
<td></td>
</tr>
<tr>
<td>General Health</td>
<td>IHD patients</td>
<td>69.86</td>
<td>14.3114</td>
<td>-14.103*</td>
</tr>
<tr>
<td></td>
<td>Normals</td>
<td>111.46</td>
<td>15.1728</td>
<td></td>
</tr>
</tbody>
</table>

**p< 0.01

Table 1 shows that the difference between the mean scores of IHD patients and normals for depression is found to be significant (t = 23.5) at 0.01 level. It shows that the State anxiety of IHD patients (m= 64.06) are higher when compared to that of normals (m = 29.44).

From this result, it is clear that, there exists anxiety and depression in ischemic heart disease and it is usually expected that anxiety and depression are relatively more common among IHD patients than normals.

There are number of studies showed that anxiety, depression and stress levels are significantly increased after the onset of ischemic heart disease and could be contributing or predisposing factors for the recurrence of cardiac events for ischemic heart disease (Vikram et al., 2002; Michael, Krishnaswamy, Muthusamy, Yusuf, & Mohamed, 2005; Rivelli, Sarah, Jiang, & Wei, 2007; Waldman et al., 2009; Kent, & Shapiro, 2009). New research showed that ischemic heart disease patients who
suffer significant anxiety had close to a fivefold increased risk of experiencing frequent angina and those with depression had more than a threefold increased risk of these episodes (Arnold et al., 2009).

Anxiety and depression is a common comorbidity associated with ischemic heart disease (IHD). The influence of trait anxiety is least importance for these study groups because trait anxiety can influence at stage of life even if a person having a disorder or not. And also there is growing evidence that general stress and health in particular predispose to cardiovascular disease. Persons who have mental stress during daily life are at twice the risk of myocardial ischemia, and patients with post-myocardial infarction depression have higher mortality rates than non depressed controls. (Christopher et al, 2000; Brunckhorst, Holzmeister, Scharf, Binggeli, & Duru, 2003). These findings suggest that a psycho-physiologic mechanism underlying the vulnerability of anxiety, depression, general stress and health outcome to the ischemic heart.

Recent studies indicated that IHD patients with depression and anxiety may exhibit abnormal low heart rate variability while compared with non cardiac patients-Reduced heart rate variability seems indicate decreased cardiac-vagal tone and elevated sympathetic activity in anxious and depressive patients and would reflect deficit in flexibility of emotional physiological mechanisms (Vlastelica, 2008, Vermeltfoort et al, 2009; Servant, Logier, Mouster, & Goudemand, 2009). Depression and anxiety are major public health problems and have been shown to be associated with increased risk for cardiovascular disease. The prevalence and incidence of depression and anxiety are lower in those who are regularly active. Regular physical activity has also been shown to reduce symptoms of depression and anxiety in those who already suffer from these disorders. Regular physical activities had been demonstrated to lower blood pressure and improve nitric oxide-mediated vascular function, increase heart rate variability and baroreflex sensitivity, increase fibrinolysis, and, possibly, decrease platelet activity. Little or no work has been done to determine the optimal amount or intensity of exercise to prevent or reduce the symptoms of depression and anxiety (Robert & Zoeller, 2007).

The results indicate that the higher risk of cardiac events might be a result of behaviors that come with depression (f =276.150) state anxiety (f = 241.253), general stress (f = 62.701), and general health (f =98.438); especially in high significant levels as the number of ischemic attacks increases. The roles of depression, anxiety, general stress and health, in patients with ischemic heart disease (IHD) have become the focus of extensive studies (Kubzansky, Kawachi, Weiss, & Sparrow, 1998; Jiang, Krishnan, & O’Connor, 2002; Frasure-Smith et al, 2007; Whooley et al, 2008). A recent projection of future population health (Mathers & Loncar, 2006) concluded that by 2030, unipolar depressive disorders and IHD will be among the three leading causes of disease burden worldwide.

Heart disease and depression are commonly comorbid (Rudisch & Nemeroff, 2003), are considered to have a bidirectional relationship - (Plante, 2005), and are associated with substantial and broadly equivalent physical functional impairment (Surtees, Wainwright, Khaw, & Day, 2003).

Evidence from prospective healthy cohort studies had reinforced earlier conclusions that anxiety and depression is associated with an increased risk of all-cause mortality (Takeshita et al., 2002; Wassertheil-Smoller et al., 2004; Wulsin et al, 2005) and incident cardiovascular disease (Rugulies, 2002; Wulsin & Singal, 2003). However, interpretation of this evidence is subject to considerable uncertainty given the syndromal and diagnostic complexity and the wide variability in severity,
comorbidity and clinical history of anxiety and depressive disorders. Meta-analyses have so far been unable to provide insight into whether and how this clinical heterogeneity differentiates subsequent heart disease risk (Wulsin, Evans, Vasan et al., 2005; Wulsin, & Singal, 2003; Davidson, Rieckmann, & Rapp, 2005; Nicholson, Kuper, & Hemingway, 2006; Van der Kooy et al., 2007).

Anxiety and depression can be profoundly disabling, and it presents considerable challenges for detection and for effective care, especially in combination with the specific needs of the elderly. While recent studies have produced encouraging evidence that tailored collaborative care intervention for anxiety and depression in later life provides clinical benefit (Hunkeler et al., 2006) that may be sustained over the long term (Gilbody, Bower, Fletcher, Richards, & Sutton, 2006) and is associated with reduced mortality (Gallo, Bogner, Morales, Post, Lin, & Bruce, 2007; Frasure-Smith, & Lesperance, 2010), whether such care would contribute to a reduction in ischemic heart disease outcomes.

CONCLUSION

Depression and anxiety is not only a risk factor for cardiovascular disease but is also a strong predictor of mortality in patients with manifest ischemic heart disease. So, there is need for identifying anxiety and depression in the clinical practice that primary care physicians will consider risk factors for ischemic heart disease when evaluating patients. There is a clear consensus that depression and anxiety are currently under-diagnosed in cardiac patients by cardiologists and primary care physicians alike. A possible reason for the low rate of detection is uncertainty among physicians about how to manage these disorders in cardiac patients if the disorders were identified. There is need for psychological intervention to manage and control the symptoms of anxiety and depression in cardiovascular diseases in each and every cardiology units. The present investigation revealed that depression, anxiety, general stress, quality of life, life events and cardiovascular conditions were closely interrelated.

REFERENCES


_Heart_, 96, 1736.


Anxiety and Depression in Ischeamic Heart Disease


