Anxiety and Depression in Ischeamic Heart Disease

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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 Kollam and Trivandrum districts of Kerala State. 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.

Keywords: Anxiety, Depression, Ischeamic Heart Disease

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 diease (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, Heliövaara, 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 ischemic 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 underdiagnosed 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.

Hypotheses:

1. There will be significant difference between the ischeamic heart disease (IHD) patients and normal population in the mean scores for the variables[Å] under study.

2. There will be significant differences among the three groups, viz., subjects with first ischeamic episode, second ischeamic episode, and three or more ischeamic episode for the variables under study.

Method

Sample:

The purposive sample consisted of 100 subjects, with ischeamic heart disease patients (IHD) patients (N=50) and normals (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 ischeamic heart disease (IHD) patients represents from Medical College Trivandrum, SUT Hospital Trivandrum, Kerala and Benziger Hospital, Kollam, Kerala. For the normal population (N=50) from both Kollam and Trivandrum Districts of Kerala State.

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 Malayalam Adaptation of Beck Depression Inventory was used. Each of the inventory items corresponds to a specific category of depressive symptom and/or 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 measure are somatic symptoms, anxiety and insomnia, social dysfunctions, and severe depression. Reliability was 0.94 and validity was found to be 0.82.

Results and Discussion

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 Anxiey 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 Ischeamic heart disease and it is usually expected that anxiety and depression are relatively more common among IHD patients than normals.

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

Variables	Group	Mean	SD	t –value
Depression	IHD patients	36.68	8.7048	23.503*
	Normals	4.78	4.0421	
State Anxiety	IHD patients	64.06	7.5847	21.931*
	Normals	29.44	8.1895	
Trait Anxiety	IHD patients	49.18	6.586	1.013
	Normals	47.52	9.5303	
General Stress	IHD patients	39.44	6.354	11.252*
	Normals	24.46	6.9465	
General Health	IHD patients	69.86	14.3114	-14.103*
	Normals	111.46	15.1728	

*p< 0.01

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 nondepressed controls. (Christopher et al., 2000; Brunckhorst, Holzmeister, Scharf, Binggeli, & Duru, 2003). These findings suggest that a psychophysiologic 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 bar diagram provides information regarding the differences between IHD patients and normals for all the five variables in the study. It makes comparisons easily understandable by giving a picturesque view.
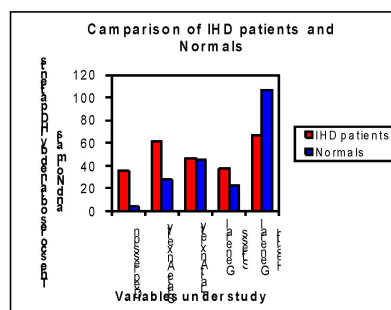

Fig 1. Bar diagram of different variables under study for IHD patients and Normals

The results indicate that the higher risk of cardiac events might be a result of behaviors that come with depression (F = 276.158), 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, & Lespérance, 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.

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