

Coronary Artery Disease and Experiences of Losses

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Summary

Background: In literature, depression is associated with cardiovascular diseases. From clinical experience, we observed that the psychological category “experience of loss” was associated with the onset and development of coronary heart disease. The experience of loss caused by self-reported significant event(s) leads to grief and the psychosocial factors which predispose the patient to diseases.

Objectives: To study the impact of the experience of loss by investigating the relationship between mourning and depression, in hospitalized patients with coronary heart disease.

Methods: 44 inpatients (50% men and 50% women, aged 33 to 65 years), with a diagnosis of acute myocardial infarction or angina, were evaluated. Two instruments were used: a semi-structured interview, for investigating the experience of loss and evaluating the state of grief; and the Beck Depression Inventory, for measuring the severity of depression. The results were expressed using the computer program Statistical Package for Social Sciences version 11.0.

Results: 66% of the patients were in mourning, the relationship between mourning and depression was significant ($p < 0,05$), and we verified that 100% of the patients who had serious depression were in mourning. The most frequent self-reported significant event was death of a family member (47%) and death of a close person (13%), totaling 60% of the events, reported by 84% of the participants. According to the results of Beck Depression Inventory, 48% of them had depression.

Conclusion: This study suggests that the psychological category “experience of loss” should be used as an indicator of the existence of psychological factors that could predispose the patient to CAD, and also confirms the relationship between a state of mourning and depression. (Arq Bras Cardiol 2009; 93(3) : 327-333)

Key Words: Coronary artery diseases; depression; inpatients / psychology; affective symptoms.

Introduction

In Latin American countries, the presence of psychosocial factors is associated with an increase in the risk of acute myocardial infarction (AMI). AMI patients showed a higher prevalence of psychological factors (40.2%) than did controls (26.6%)¹.

Work-related emotional stress, personal and family problems also represent a risk of disease. Traditional risk factors - hypercholesterolemia, smoking habit, sedentarism, high blood pressure, diabetes mellitus, obesity - were not found in 35% of the reported cases of coronary artery disease (CAD), prompting the search for other risk factors. For some authors, the issue of risk factors is still open to discussion. In clinical practice, several combinations of these factors are observed in each individual².

Pereira and Haddad³ observed, in 22 patients, the

manifestation of the disease in the occasion when the loss of a close friend was experienced, either by death, disease or relationship disruption, which was consistent with what is observed in routine psychological assistance to heart disease inpatients who report dramatic experiences of significant loss, which led to the establishment of the category “experience of loss” as the theoretical construction of a phenomenon⁴.

The experience of loss is triggered by significant events, that affect subjectivity due to the feeling of privation, thus fostering the retrieve of previous losses. It is considered an equivalent to a psychosocial crisis or a stressful situation⁵.

The experience of loss, as a category, comprises three different epistemological approaches that coexist in regard to human beings. One of them is related to the psychosocial aspects of Psychology and to a subjective adaptation ability to daily events, with an emphasis on the ambient environment. Another approach is related to the psychodynamical aspects of Psychology, based on Psychoanalysis, which considers the bodily manifestations of anguish and other emotions as indicators of psychic conflicts. The third, that characterizes the medical practice, focuses on the phenomenological descriptions of functional and bodily symptoms, with predominance of organic aspects, including psychiatric aspects. Therefore,

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three fields were covered: the biological, the psychological and the social.

The purpose of this research is to demonstrate the presence of the experience of loss in coronary heart disease inpatients, and the resulting manifestation of the feeling of mourning, as well as its relationship with depression.

Background

Mourning and the experience of loss

When the experience of loss occurs, there must be a psychic work of mourning and grief, which Freud defines as a reaction to the loss of a loved one or an equivalent abstraction, such as the nation, freedom, or an ideal. It is a psychic work that consists in coping with the loss and forsaking the relationship with the lost object, but since then, some difficulties in this process were pointed out, and in his writings he argues that the pathological processes are opposed to grief⁶.

According to Glass⁷, Freud's concepts based on clinical observations were premature, but they were precursors of current views about normal and pathological process of grief.

Everyone has the experience of real or imaginary loss in life, but failure in coping may indicate the possibility of current or future medical and/or psychiatric complications. The coping process varies widely among people, each individual facing and reacting to loss differently, depending on the personality of the grieving subject, his or her previous experiences in life, the significance of the loss, the relationship with the object, the existence of a social and familial support network, the cultural background and life intercurrent events, among others⁸. Until the state of prolonged grief is experienced, there are many routes and manners of coping, a diversity that results from the subjective conditions of each human being⁹.

Prolonged grief and mourning can lead to organic dysfunction that causes diseases. Several physical and mental illnesses have been attributed to the experience of loss, and this grief can lead to the feelings of hopelessness and helplessness that cause physical diseases¹⁰. Getting sick is a reaction to unresolved loss. It has been demonstrated that there is a high mortality rate in the second or third year after the death of a close person, a spouse or any other member of the family¹¹.

Ruschel's¹² study focuses on seven patients with myocardial infarction who reported unresolved grief for the death of a member of the family as one of the causes of the disease. It has, as a reference, the term unresolved grief, based on development deficits and symbolic ability¹².

Grief and depression

It is known that in any stage of life, psychic organization and/or personality, human beings can manifest depression, as a psychological reaction, affecting simultaneously psychic, behavioral and organic aspects.

The literature shows that a precise differential conceptualization between mourning and depression has not been easily defined. According to the Diagnostic and Statistical Manual of Mental Disorders (DSM IV), a major depressive episode can be diagnosed if the symptoms

persist for longer than 2 months after the loss of a loved one. Prolonged grief symptoms can turn into the symptoms of a major depressive episode. The feeling of mourning is defined as a situation when the focus of clinical attention is a reaction to the death of a loved one. A depressed humor is normal in grieving individuals. The persistence and expression of a normal feeling of mourning vary considerably among different cultures. It may also be considered as a life development phase problem, a category that can be used when the focus of clinical attention is a problem related to a specific phase of development or other life circumstances that do not result from a mental disorder. Some significant events can be used as examples: leaving home; starting school; a new job; marriage; divorce; retirement. It is known that significant events can cause a state of grief¹³.

The complications of grief can become risk factors for psychiatric diseases, such as major depression, which is a reaction to grief.

The state of grief is seen as a psychodynamic aspect of depressive patients, and depression is seen as a symptomatic manifestation of grief, therefore depression and grief coexist interdependently, as elements of the same phenomenon: the experience of loss.

Depression and coronary heart disease

The World Health Organization report (WHO, 2001) declares that depressive disorder, currently the fourth cause of death, can become the second leading cause of death, by 2020, outranked only by heart disease¹⁴.

Cardiovascular diseases are indicated in literature as one of the most frequent causes of mortality in Western World, and the most important etiology of this group of diseases is human atherosclerosis, which is a chronic, progressive and systemic process, characterized by an inflammatory and fibroproliferative response in the arterial wall, caused by damage to the arterial surface^{15,16}.

CAD and depression, both diseases which seriously affect health, due to their high prevalence and their impact in mortality and the quality of life, present clinical evidences that indicate the existence of a close relationship between them¹⁷.

Furchgott and Zowadzki¹⁸ demonstrated that the endothelial cell actively controls vascular tonus, coagulation, thrombolysis, vascular remodeling and the inflammatory and immune responses^{18,19}. As it is a chronic inflammatory disease, there are evidences which suggest the presence of an infectious agent that may have an important role in the genesis of the plaques that obstruct the arteries, with the following relationship: infection—inflammation—atherosclerosis.

Depression, as a predisposing factor for CAD, interferes in the immunological and neuroendocrine changes that can affect the infectious process (therefore its emphasis in literature) which is associated to some heart diseases, whether this relationship is one of cause, risk factor or consequence, that is, when there is evidence of a greater prevalence of depression among coronary heart disease patients²⁰.

Strike and Steptoe²¹ noticed and demonstrated interest in the increasing volume of evidence, by clinical and epidemiological studies, that psychosocial factors

contribute to the incidence of coronary heart disease, and depression is included among those factors. They reviewed epidemiological prospective cohort studies on depression and the subsequent incidence of CAD, demonstrating that the comparative risk among depressive patients is twice as great as among non-depressive patients. Therefore, depressive individuals are more prone to develop angina or myocardial infarction. They reported that several studies on depression and coronary heart disease encourage the investigation of the involved psychobiological mechanisms. According to these researchers, depression could cause inflammation, which would lead to coronary heart disease, or an unknown inflammatory process could cause depression and coronary heart disease. For these authors, depression can also contribute to the development of CAD, interfering in habits such as smoking, nutrition, lack of physical activity and non-adherence to treatment. All these risk factors are prevalent in depressed individuals, and consequently greatly affect endothelial function. These authors believe that depression can act as a chronic stressor, prolonging endothelial dysfunction and its consequences, with an increase in adhesion, migration and proliferation of cells that result in a proatherosclerosis environment. The study by these authors shows clinical evidences that depression can be both a marker and a risk factor for CAD²¹.

Concerning depression and cardiovascular diseases, there are attempts in literature to explain this close relationship, although the involved mechanisms are not clearly defined. Generally, the psychological aspects are not well-documented, included, and/or explained, but only implied in the studies, which justifies this research.

Objectives

To study the impact of the experience of loss by investigating grief and depression and the relationship between them, in hospitalized patients with coronary heart disease.

Methods

This is an observational study, with a quali-quantitative approach.

The sample was composed of 44 inpatients, both genders, aged 18 to 65 years, with the diagnosis of acute myocardial infarction or angina. They were evaluated while hospitalized for investigation, with no indication for surgery up to the assessment, in the Cardiology Inpatient Unit, at the Clinics Hospital of the Federal University of Parana. They were assessed through the routine evaluation and psychological assistance for inpatients, in the sequential order of hospitalization, according to established criteria.

This research project was approved by the Research Ethics Committee of the Clinics Hospital of the Federal University of Parana. To participate, the patients had to fulfill the established selection criteria, and they also had to be lucid and well-oriented, and accept their inclusion in the research, by signing an informed consent.

Two instruments were used: a semi-structured interview and the Beck Depression Inventory (BDI).

The interview was used to identify significant event(s) with the following key-questions: Did anything happen that changed your life? Did you experience any loss that was significant to you, leading to changes in your life? Another purpose of the interview was to assess the severity of grief, which was done by the identification of significant event(s) and also by eight descriptors of grief: sadness; crying easily; longing for the lost object; feeling of emptiness; feeling of guilt; isolation; loss of interest; and inhibition. These were assessed in the course of clinical practice, identified during the interview with the patient, identified through observation, or declared in the report. The presence of three of these descriptors was considered as a state of grief.

The BDI was used to evaluate the severity of depression. It consists of 21 multiple-choice questions, each with four alternatives from which one is to be chosen. This inventory is an instrument used to assess the severity of depression, ranked according to the following score: less than 10 points: no depression; from 10 to 18: mild to moderate depression; from 19 to 29: moderate to severe depression; and 30 to 63 points: severe depression²².

Kendall et al²² suggest that depression be considered when the score is above 19 points, corresponding to the ratings of moderate to severe depression and severe depression²³. Following this recommendation, the results were obtained in another manner, taking into account two categories: "with depression", grouping the BDI results of moderate to severe depression and severe depression; and "no depression", grouping the BDI results of no depression and mild to moderate depression.

The statistical analysis was performed using the computer program Statistical Package for the Social Sciences (SPSS -11.0), to identify relationships between the variables of this study: significant events, mourning and depression. To obtain the results of significance between variables, we used the chi-square statistical test. For the other analyses, we used the frequency and simple percentage.

Results

Characteristics of the Sample

Both genders, equal number of women and men, age range from 33 to 65 years. All 44 patients were assessed while hospitalized in the Cardiology Inpatient Unit, 25% of them with the diagnosis of acute myocardial infarction, and 75% of them with the diagnosis of angina.

There was a predominance of 52.3% of the age group between 50 and 60 years.

As to marital status, 65.9% had a companion; 13.6% were separated or divorced; 11.4% were widowed; and 9.1% were unmarried.

State of mourning, significant events and descriptors

All reported significant events, and a total of 100 significant events were reported. Among these, the predominant event was death of a family member, 47%, which added to the event death of a close person, 13%, resulted in the total of 60%. These data are shown in Table 1.

Table 1 – Types of significant events

Type of event	FR. ESA	FR. ESR	Percentage
Death of a child	8	1	9%
Death of a spouse	4	1	5%
Death of a sibling	10	3	13%
Death of father	6	1	7%
Death of mother	8	5	13%
Death of a family member - total	36	11	47%
Death of other close person	2	11	13%
Disease of a family member	-	9	9%
Alcohol and Drug Problems in the Family	3	2	5%
Marital separation	6	1	7%
Separation from family member	1	1	2%
Argument with family member	-	2	2%
Parent-child problems	-	1	1%
Marital problems	-	1	1%
Concerns About Children or Grandchildren	-	1	1%
Job loss	2	3	5%
Financial problems	1	2	3%
Argument with customer	-	1	1%
Moving to another city	1	1	2%
Change in residence	-	1	1%
Total	52	48	100%

84.2% of the participants reported death of family member or close person as a significant event, and the state of mourning was identified in 65.9% of the total sample.

As the number of deaths reported by the participants, five categories were taken into account: no death, 1 death, 2 deaths,

3 deaths, 4 deaths. It was observed that 100% of those who reported 4 deaths were in mourning; and among those who reported 2 deaths, 85.7% were in mourning. Of those who had not reported any death, only 14.3% were in a state of mourning (Graphic 1).

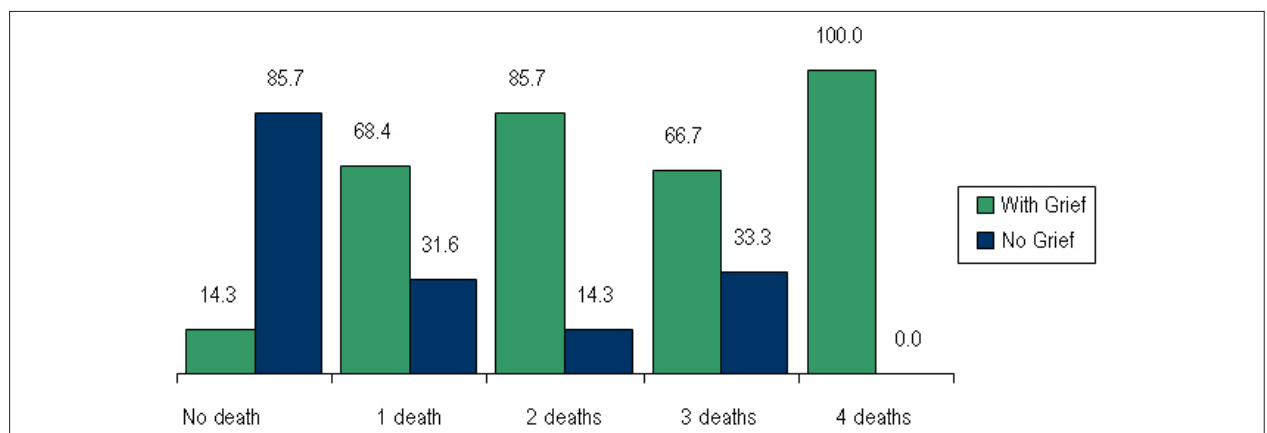
Of the eight descriptors of the state of grief, the most frequent in descending order, were: sadness (50.0%), longing for the lost object (47.7%), crying easily (36.4%), feelings of guilt (22.7%), feelings of emptiness (13.6%), isolation (13.6%), loss of interest (11.4%) and inhibition (2.3%). It should be noted that such percentages do not total 100% because we considered three descriptors of grief for each subject. These figures are presented in Table 2.

Severity of depression

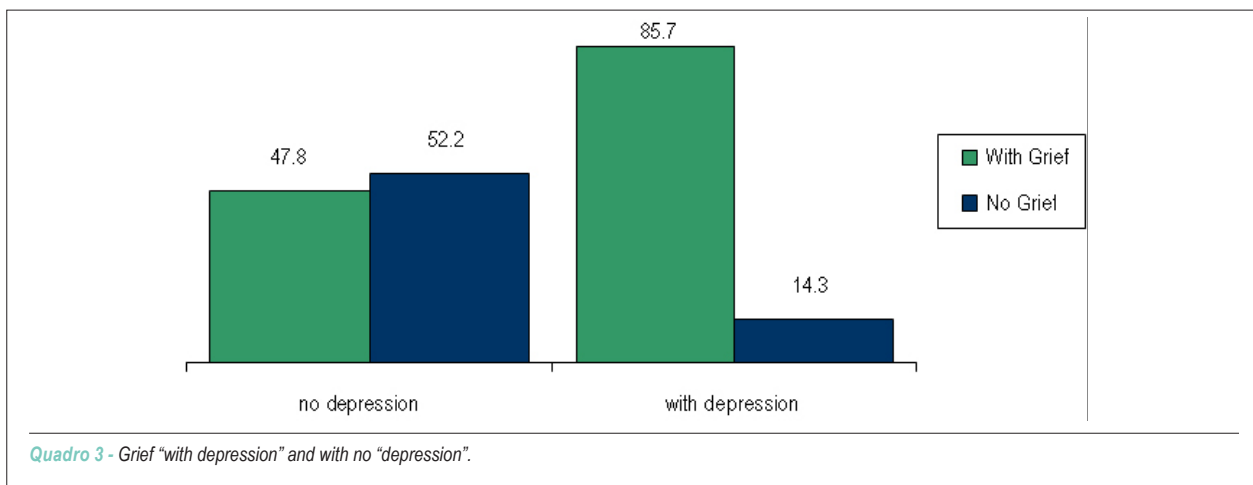
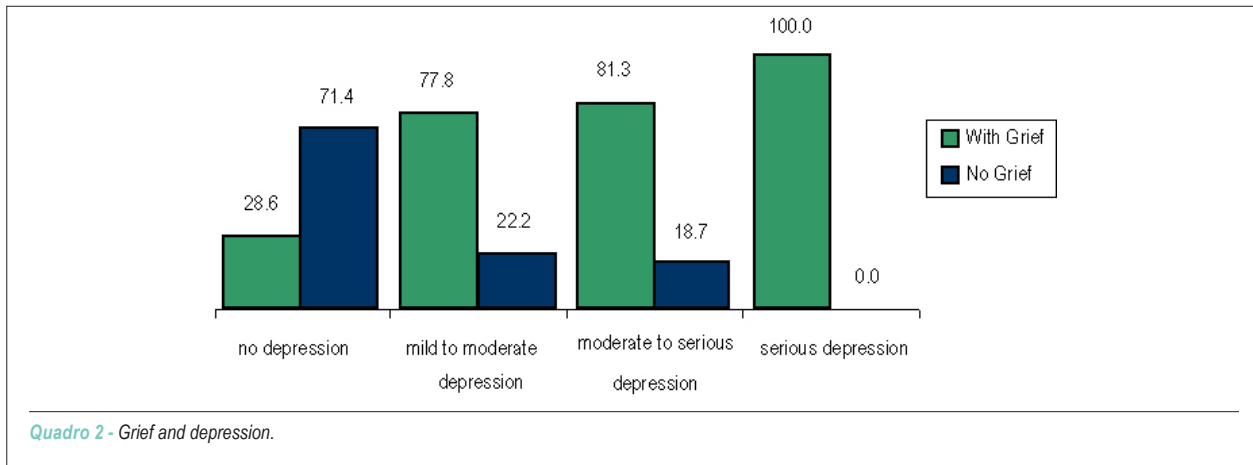
According to the results obtained by the Beck Depression Inventory, 68.3% of the total sample had depression. Of these, 20.5% had mild to moderate depression; 36.4% had moderate to severe depression; and 11.4% had severe depression. Another classification was also presented, considering two categories (“with” and “without” depression): 47.8% had depression and 52.2% did not have depression. Table 3.

Table 2 - Descriptors of grief

Indicators of grief	Frequency	Percentage
Sadness	22	50.0
Longing for the lost object (person-thing-situation)	21	47.7
Easy crying	16	36.4
Feelings of guilt	10	22.7
Feelings of emptiness	6	13.6
Isolation	6	13.6
Loss of interest	5	11.4
Inhibition	1	2.3



Quadro 1 - Grief and death(s) as significant event - 4 categories.



Relationship between grief and depression

We found a significant relationship between grief and depression ($\chi^2=13.513$; $gI=3$; $p<0.05$).

With regard to the patients who did not have depression, 71.4% were not in grief, which was present in 28.6% of them.

The percentage of the state of grief increased with the progressive classification of depression, so that 100.0% of the patients with severe depression had grief, as well as 81.3% of those who had moderate to severe depression, and 77.8% of those who had mild to moderate depression. Graphic 2.

Taking into account the Beck Depression Inventory results, grouped in two categories ("with" and "without depression"), the relationship between grief and depression was also significant ($\chi^2= 7.013$; $gI=1$; $p<0.05$). Graphic 3.

Discussion

Characterization of the sample according to age

The predominance of the age group between 50 and 60 years (52.3%) is characterized as a transition from adulthood to advanced age, when the bodily changes trigger other

psychological and behavioral changes. At this stage, there are frequent losses of family members and friends, in addition to a decrease in vitality, productive life and sexuality, which are considered as experiences of loss, situation changes and/or psychosocial crisis. Based on these results, the age group above 50 years can be considered as having the highest risk, and that was precisely what happened with 79.6% of this sample, whose patients were hospitalized for clinical evaluation in the cardiology unit, because of angina or acute myocardial infarction. This may be associated with the fact that human atherosclerosis is considered a chronic, progressive and systemic process, which can start at an early age, but be manifested later in adulthood¹⁵.

The age delimitation of this sample to 65 years, besides being considered by the World Health Organization as the beginning of advanced age, was due to the fact that some of the characteristics of the life cycle of old age coincide with the symptoms of depression. A study performed with the aging population, in Rio Grande do Sul, showed that depression in this population has unique clinical features. The decrease in the emotional response entails a predominance of symptoms such as reduction of sleep, loss of pleasure in usual activities; obsessive reflection upon the past; and loss

of energy. This difference in the presentation of depression in the elderly when compared to adults, has caused some authors to formulate the hypothesis of a lower prevalence of depressive disorders in this age^{24,25}. However, the experience of loss may be present, as they face the possibility of the end of life, death and other typical changes of this life stage. This change is justified by the elimination of a possible confusion between the characteristics of depression and the life cycle of old age.

Significant events and the state of mourning

Significant events trigger experiences of loss and the state of mourning.

All subjects in this sample reported the occurrence of one or more significant events in the course of their lives, but not all of them were in mourning. This means that it is not all events that will determine the experience of loss and mourning, because for this it must affect the psychic reality and become a significant event. Of all the events mentioned, 60% were deaths of a family member or a close person, and a statistical significance was found in the relationship between the state of mourning and the number of deaths reported as significant events ($\chi^2 = 9873$, $gl = 1$, $p < 0.05$). These data confirm the difficulties involved in coping with the loss of a family member or a close friend. The psychic work of the state of mourning will depend on the type of relationship established, on the degree of dependence, on the ambivalence, on what the person who was lost represented in the psychic economy, on how much the relationship was sexually invested and how much it was part of the identity of this person. The quality of the bond will determine the existing subjective resources available to enable the patient to cope with the loss or the process of mourning²⁶.

The classification of events as old significant events which occurred more than two years ago, and recent significant events which occurred two years ago, is due to Kaplan and Sadock²⁷, who consider one to two years as the time needed to cope with the loss. This research considered the state of mourning as resulting from a loss occurred up to two years ago as similar to the grief resulting from a loss occurred before this, denoting the difficulties in coping with it. This also denotes that the psychic time of occurrence of these events is current, because the unconscious is timeless²⁸, and the experience is unique, especially when the emphasis is put on the subjective conditions needed for coping with the loss and for experiencing grief. Grief can be verified and manifested in the same way both for those who lost a family member or a close person recently, up to two years ago (significant recent event), and for those who lost a loved one more than two years ago (old significant event). 52.3% of the patients reported recent and old significant events. From a psychodynamic point of view, a recent significant event leads to the experience of another old significant event²⁸.

The state of mourning

The state of mourning observed in 65.9% of the patients in this sample confirms the importance of the psychological category "experience of loss", as an indicator of the presence

of predisposing psychological risk factors for coronary heart disease. Those who grieve are experiencing unresolved losses, and this demonstrates explicitly the existence of those psychological aspects, which represent still one more factor involved in the process of developing a disease.

Shear and Shair²⁹ reply that the death of a close person produces a traumatic experience of loss and symptoms of acute grief, that usually follow a revision of the internal representation of the deceased person, to be incorporated as the patient faces the reality of death. A failure in this process results in a complicated grief syndrome, which comprises the prolongation of the duration of grief.

The issue of the duration of grief is open to discussion, especially because from a psychiatric point of view this is the aspect that determines the difference between grief and complicated grief, between grief and depression. As to the approach to subjectivity, the priority lies in the subjective difficulties for understanding the experience of grief, which involves many aspects of the relationship with the lost object; therefore, the duration of coping is a secondary concern. It is noteworthy that Freud was a neurologist, concerned about the difference between the normal and the pathological in relation to grief—an issue that is still important for current psychopathology.

Grief and depression

As these patients were ill and hospitalized—a situation where depression could be considered secondary, i.e. expected—we followed the suggestion of Kendall et al²², taking into account two categories (with and without depression), and we found that 47.8% of them had depression and thus we confirmed the association between grief and depression, which was statistically significant. As not all patients in mourning had depression, of those who did not have depression 28.6% were in mourning.

Piper et al³⁰ concluded that patients with complicated grief, when compared to others who did not experience the loss of a close person, displayed a tendency to high levels of depression and in general presented symptoms of stress.²⁸ This study demonstrated that 100% of those who had severe depression were in grief, as well as 81.3% of those who had moderate to severe depression. The state of grief was not present in 71.4% of the patients who did not have depression.

Clemens³¹ uses the terminology "deconstruction of depression" when referring to a clinical practice focused on the uniqueness of each case, considering that under depression, suffering for the loss and the state of mourning can be observed.

Depression can be an inherent manifestation of mourning, a sign of suffering and a psychological reaction to loss, according to Romano's²⁰ suggestion that the co-existence of depression and heart disease can be seen as a normal reaction to grief or the failure of this process.

Conclusion

This study shows that the experience of loss and its resulting state of grief are frequent psychological factors in

the manifestations of CAD.

It stresses the interdependent relationship between the state of grief, as a psychodynamic element, and the manifested depression as two distinct realms incorporating the same phenomenon: the experience of loss.

It suggests that the category "experience of loss" is an indicator of the presence of psychological factors predisposing to manifestations of CAD. This represents a contribution to the assessment, diagnosis and prevention of depression, identified in the literature as a risk factor associated with cardiovascular disease.

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