The role of psychological support in cardiac surgery: initial experience

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Abstract

The scientific literature has pointed out several predictors of negative outcome after surgery such as pain and depression, negatively affecting the postoperative outcome in cardiac surgery. From January 2009 until June 2010, 15 patients scheduled for cardiac surgery were enrolled. The patients were assessed by psychological evaluation either in the hospital stay either in the rehabilitation period with the aim of identifying their emotional condition (sentiments about the onset of the disease, support received from family and friends) even by means of preformed tests for anxiety and depression (tests of Stay and Back). Thus, in our preliminary experience, the psychological evaluation failed to detect the occurrence of postoperative complications. Conversely, the psychological evaluation is very effective in detecting a poor emotional state and the psychological support decreases the degree of anxiety and depression with positive effects on postoperative outcome. In conclusion, a standardize test for anxiety and depression should be used for patients at hospital admission to detect who may benefit from psychological support.

Material and Methods

From January 2009 until June 2010 15, patients scheduled for cardiac surgery were enrolled. The patients were assessed by psychological evaluation either in the hospital stay either in the rehabilitation period with the aim of identifying their emotional condition (sentiments about the onset of the disease, support received from family and friends) even by means of preformed tests for anxiety and depression (tests of Stay and Back) as shown in Tables 1 and 2. Four interviews were administered: three over the hospital stay and the last one two months later: i) First meeting: psycho-diagnostic investigation and test administration; ii) Second (preoperative) and third interview (postoperative): psychological support to detect anxiety, fears, experiences and hopes after surgery; test administration; iii) Fourth interview (two months later): conclusions and verification of the tools used; test administration. Several matters were discussed during the interviews (Table 1): illness - onset and sentiments; religion- belief and faith; network of social support received from family and friends; lifestyle (hobbies, emotions and experiences), hopes. Eight patients were females with a mean age of 61.9±16.7 years. Ten patients were married, 3 patients were widows and 2 patients were singles. 12 patients had soon. Ten patients had a primary school graduation and 5 patients had a high school graduation. Thirteen patients have a job, 1 patient was a housewife and 1 patient was a student. Fourteen patients were catholic and 1 was of waldensian religion: 7 patients usually pray and participate to religious activities. All of them had prayed before operation. Three patients had previous cardiac operation (2 aortic valve replacement and 1 mitral valve replacement) whereas 1 patient had a previous percutaneous coronary angioplasty (PTCA). Six patients had a previous general surgery operation. The cardiac procedures were: 6 mitral valve operations (repair or replacement), 5 aortic valve replacements, 3 root replacements (2 Bentall and 1 David procedure), 1 mitro-aortic valve replacement associated to tricuspid repair and ascending aorta replacement. The mean duration of hospital stay was 13.6±10.5 days and 5 patients had significant postoperative complications (2 pace maker implantations for complete atrio-ventricular block, 3 bleedings). One patient had a prolonged intensive care unit stay for respiratory failure requiring a tracheotomy. One patient required a re-operation 6 months later. After hospital discharge, all patients participated voluntary in cardiac rehabilitation to achieve a complete recovery.

Results and Discussion

Recently, the scientific literature has pointed out several predictors of negative outcome after surgery such as pain and depression, negatively affecting the postoperative outcome in cardiac surgery.1-3 The relation between depression and complications after surgery has been already shown even by the Italian guidelines on cardiac rehabilitation and prevention for the cardiovascular diseases,4 highlighting that pain, depression and anxiety impair the postoperative outcome and delay recovery. The possible relationship between
### Table 1. Preoperative characteristics of the patients.

| Patient number | Sex | Region of birth | Religion | Married | Number of children | Instruction | Work | Personality | Previous surgery |
|----------------|-----|-----------------|----------|---------|--------------------|-------------|------|-------------|------------------|
| 1              | F   | Libya           | Catholic | Yes     | 3                  | Primary school | Employee | Active; reference point for the family has many interests (reading, writing) and plays the role of mediator between her husband and children | Multiple. Previous breast cancer (1999) |
| 2              | M   | North Italy     | Catholic, usually prays | Yes | 3 | Primary school | Farmer | Very active, busy, working, reading, looks after the grandchildren and he takes care of his sick wife | PTCA |
| 3              | F   | North Italy     | Catholic | Yes | 1 | Primary school | Worker | No interests declared sadness and loneliness, isolation, feeling of being a burden. | -- |
| 4              | F   | France          | Waldensian religion | No | 0 | Primary school | Worker | She describes herself as quiet but is very apprehensive towards self and others. | Cholecystectomy (2002) |
| 5              | F   | South Italy     | Catholic, usually prays | Yes | 1 | Primary school | Worker | Very dynamic, with traits of omnipotence (occlusion of carotid artery), funny, energetic. She is always busy with the family (looks after her niece). Passion: crochet | Aortic valve replacement |
| 6              | M   | South Italy     | Catholic, usually prays. He should become a priest | Yes | 1 | Primary school | Policeman | He describes himself as gruff. Self-contained, he does not want to give to other concerns. Volunteer, many friends, passion for football. Hard worker | Meniscectomy |
| 7              | M   | South Italy     | Catholic, usually prays | Yes | 0 | Primary school | Warehouseman | Active, full of interest, very strong and determined. He spends a lot of time for the others (who prefers to himself). Great anxiety following the discovery of the disease: change of his personality (from strong to weak). He wants comfort, support from relatives but feels guilty because it makes them suffering. | -- |
| 8              | F   | South Italy     | Catholic, usually prays | Yes | 2 | Primary school | Goldsmith | Active, very rich and full life, she never gave up despite no intervention 1 to 21 years. He later developed anxiety disorder with sporadic panic attacks (especially in relation to children). Very demanding on herself. Places the other in itself, cannot ask for anything for himself. | Aortic valve replacement twice (1986-1996) |
| 9              | F   | North Italy     | Catholic, usually prays | Yes | 2 | Primary school | Housewife | Very energetic, decisive and determined: he has always organized the family life. She makes all the decisions. Husband and daughter are completely dependent on her. Disturb in the capacity of the other (inert and weak). Very stubborn. Fear of losing control, difficulty in showing emotions, does not say what she feels. Places the other in itself, cannot ask for anything for himself. | Mitral valve replacement ago twenty years |
| 10             | M   | North Italy     | Catholic | No | 0 | High school | Student | Solar, good-natured, disordered-ordered, passion of Latin American dance. He will not change his behavior after the operation | -- |
| 11             | M   | North Italy     | Catholic | Yes | 1 | High school | Employee | Very quiet, friendly, likes staying in the garden with friends and grandchildren. | Meniscectomy |
| 12             | M   | North Italy     | Catholic | Yes | 2 | High school | Employee | Hyperactive, intense life, almost frenetic. Two jobs, many interests. Independent. He has recently reduced its activity. | Cataract |
| 13             | F   | North Italy     | Catholic | Yes | 2 | High school | Colf | He has always worked both at home and abroad. Unhappy childhood: beaten by his father. Can not ask to the others | Breast surgery |
| 14             | M   | South Italy     | Catholic | Separate | 2 | High school | Trader | Hyperactive, very positive, confident in the intervention. Creative and determined | -- |
| 15             | F   | North Italy     | Catholic | Widow | 1 | Primary school | Secretary | Very active life, many trips with her daughter and grandson. Widow for many years and no longer wanted to marry. | -- |
Brief Reports

A. Brief Reports

Thus in case of older patients with a poor degree of concentration, the age is related to the degree of support; such as they received by the psychological evaluation in describing their fears and hopes after surgery. Subjective religiosity, marital status and support by family may reduce the degree of anxiety postoperatively.

All patients described the psychological support as very useful even though the older patients had serious difficulties in completing the tests of STAI and Beck for a too long procedure reducing the degree of concentration. Thus in case of older patients with a poor instruction, the fear and the anxiety were strictly related to the exhaustiveness of the information received: when accurate, the degree of fear and anxiety was lower.

The sentiments described after initial diagnosis were: confusion; fear and uncertainty about the decision-making. In case of lack of symptoms, patient had a more complicate acceptance of the disease and usually preferred delaying surgery. On the contrary, symptomatic patients decided for a prompt surgical treatment to avoid worsening of the clinical conditions. The role of patient in the organization of familial structure had several effects on hopes after surgery: in case of a busy life with several interests and responsibilities, patients were more determined to a prompt recovery and participated all the activities proposed. However, patients with many familial responsibilities showed several difficulties in communicating to relatives sentiments, fears and hopes because they were usually a referent and not a burden. As a result, there was a lack of communication of the emotional state to the family leading to an un-useful relation characterized by practical organization without emotional support; such as they received by the psychologists.

The age is related to the degree of the support received: in case of young patients, they had significant support from parents, relatives and friends with a variable reaction to the disease, ranging from careless to panic. Conversely, the older patients had usually less way to be supported and the family is the caregiver. At the follow up evaluation, all the patients confirmed they were very concerned and afraid awaiting the operation, with a great support by the psychological evaluation in describing their fears and hopes after surgery.

In fact, many patients had serious difficulties of communication with the family in order to avoid the onset of anxiety to relatives.

However, all the patients have prayed before surgery. As previously reported, negative outcomes as depression and anxiety were partially reduced when patients employ prayer before surgery. A lower degree of depression was noted in patients using praying, with optimism and positive hope after surgery. Subjective religiosity, marital status and support by family may reduce the degree of anxiety postoperatively.

Table 2. Preoperative evaluation and reaction of the patients to cardiac disease’s diagnosis.

| Patient number | Patient reaction | Family reaction | Friends family | Support by satisfaction | Life test | Depression test | Anxiety |
|----------------|------------------|------------------|----------------|------------------------|----------|----------------|---------|
| 1              | Fear             | Great concern    | Support        | Yes                    | 6/63     | State anxiety  |         |
| 2              | No fear          | Great concern and support | Support | No | Yes | 11/63 | State anxiety |         |
| 3              | Very afraid      | Low support      | Support        | No                      | No       | 28/63 and trait anxiety | Low state anxiety |
| 4              | Very afraid and anxiety | Great concern and support | Waldens community | Support | Yes | Yes | 8/63 anxiety and low trait anxiety | High state |
| 5              | No fear          | Great concern    | Support        | Yes | Yes | 12/63 | High state anxiety |         |
| 6              | No fear          | Great concern and support | Not involved | No | Yes | 2/63 | No |         |
| 7              | Very afraid and anxiety | Great concern | Support | Yes | Yes | 50/63 | Low state anxiety |         |
| 8              | Very afraid and anxiety | Great concern and support | Support | Yes | Yes | 43/63 | Mild state anxiety |         |
| 9              | Very afraid and anxiety | Great concern and support | No friends | Low | Yes | 49/63 | Low state anxiety |         |
| 10             | No fear          | Great concern and support | Support | Yes | Yes | NP | No |         |
| 11             | Very afraid and anxiety | Great concern and support | Support | Yes | Yes | 10/63 | Low state anxiety |         |
| 12             | No fear          | Great concern    | No friends     | Yes | Yes | 8/63 | Low state anxiety |         |
| 13             | Fear             | Great concern and support | No friends | Low | No | NP | Low state anxiety |         |
| 14             | Fear             | Great concern and support | Support | Yes | Yes | 39/63 and trait anxiety | Low state anxiety |         |
| 15             | Fear             | Great concern    | Support        | No | Yes | NP and low trait anxiety | High state anxiety |         |

NP: not performed.
Table 3. Postoperative evaluation.

| Patient number | Reaction on awakening and postoperative outcome |
|----------------|-----------------------------------------------|
| 1              | PMK implantation                              |
| 2              | Respiratory failure (tracheotomy) with slow postoperative outcome. |
| 3              | Multiple seizures. Prolonged ICU stay         |
| 4              | Normal                                        |
| 5              | Normal                                        |
| 6              | Normal                                        |
| 7              | Normal                                        |
| 8              | Normal                                        |
| 9              | Bleeding and surgical re-exploration          |
| 10             | Normal                                        |
| 11             | PMK implantation and reoperation              |
| 12             | Normal                                        |
| 13             | Normal                                        |
| 14             | Normal                                        |
| 15             | Bleeding                                      |

Despite the utility of the psychological support described by patients, all of them failed the study completion (voluntary last interview) for the fear to come back to the hospital after surviving cardiac operation. In fact, the psychological support was believed as useful preoperatively even though the last interview was thought only a research purpose and just two patients came back to the hospital for the last assessment in case of late complications.

Conclusions

As reported by other researches in this field and by the national guidelines on cardiac rehabilitation and prevention, the presence of anxiety and depression are major warning signs, worsening the postoperative problems.4,6 However, the structure of personality and emotional state are quite complicated matters to debate and they cannot be summarized by numbers or sentences. Thus, in our preliminary experience, the psychological evaluation failed to detect the occurrence of postoperative complications. Conversely, the psychological evaluation is very effective in detecting a poor emotional state and the psychological support decreases the degree of anxiety and depression with positive effects on postoperative outcome.

In conclusion, a standardize test for anxiety and depression should be used for patients at hospital admission to detect who may benefit by psychological support. The major limitations of Beck and STAY test are their complexity and length. Thus, a less specific test as Zung rating scales may be the standard evaluation at hospital admission.

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