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Review Article

Sexual Dysfunction in Patients in a Cardiac Rehabilitation Program

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Abstract

The percentage of sexual dysfunction (SD), in cardiac patients, exceeds 50%. In its etiology there are several situations: fear of complications, couple problems, organic and psychological diseases, medical treatments and lack of information from professionals.

Cardiac Rehabilitation Programs (CRP), therapeutic systems of multifactorial action, have demonstrated to improve quality of life of cardiac patients. In those with ischemic heart disease, they reduce the incidence of complications and prolong survival.

There are publications which show that SD improves with CRPs because of their actions on a physical and psychological level. Initial exercise testing, monitored training, analysis of possible psychological pathologies and their treatment, during the weeks of assistance to the program, are fundamental to achieve a decrease in SD. Weekly talks and information on the subject are also very positive.

Since appearance of PDE-5 inhibitors in the 1990s, control of SD has increased significantly (positive responses in values of 75-85%)

The cardiologist, director of the Cardiac Rehabilitation Unit, knows patient's medical history and diagnostic studies performed, and are responsible for deciding the possibility of treatment with PDE-5 inhibitors, potential risks of their use and the need to refer patient to other specialists (psychiatrist, vascular surgeon or andrologist).

ABBREVIATIONS

AHA: American Heart Association; AMI: Acute Myocardial Infarction; CRP: Cardiac Rehabilitation Program; ED: Erectile Dysfunction; ICD: Implantable Cardioverter Defibrillator; SD: Sexual Dysfunction; SHIM: Sexual Health Inventory for Men

INTRODUCTION

Sexual dysfunction (SD) in healthy population and in patients with various diseases is well documented. Its aetiology is varied, and sometimes different situations arise: advanced age, problems in the couple's relationship, organic and psychological illnesses, medical treatment, lack of information, fear of possible complications, etc.

Variable percentages of prevalence (38-78%) have been described in cardiac patients, mainly after acute myocardial infarction (AMI). Some percentages in other cardiac pathologies are 50% in heart transplanted patients, 41% in defibrillator carriers, 32% after pacemaker implantation, 10-20% in adults with congenital cardiopathies and 60-70% in heart failure [1].

Cardiac Rehabilitation Programs

Cardiac rehabilitation programmes (CRP) can be effective in the treatment of erectile dysfunction (ED). It would be obtained by the improvement in psychological deterioration (frequent in these patients), the effects of regular exercise and by a greater relationship between doctor and patient, in the weeks of attendance to the multidisciplinary action programme.

The CRP at Hospital Ramón y Cajal and at IRFLASALLE [2], begins 10-15 days after discharge from hospital of patients with acute coronary syndrome, and 6 weeks in those who have undergone revascularisation surgery.

The multidisciplinary programme, with an average duration of 2-3 months, includes: a) supervised and individualised physical training; b) psychological action with behaviour modification techniques, group therapy and relaxation sessions; c) educational programme on lifestyle modification and control of risk factors; and d) social and occupational advice.

Physical training, predominantly aerobic, takes place 5 days a week. Heart rate at which training is done (FCE) is calculated based on results of exercise testing, maximum or limited by symptoms, which are carried out at beginning and end of the programme.

Psychological programme is based on an initial evaluation with study of psychological profile by personal interview and questionnaires to assess anxiety (STAI), depression (Beck) and

type A behaviour pattern (Bortner), and intervention through relaxation techniques and group therapy.

Educational programme is carried out with weekly talks and discussions, aimed at patients and their closest relatives, in which they are informed and advised about the disease and the need to modify risk factors and harmful lifestyles.

A variable percentage of patients, depending on uncontrolled factors, are included in specific subunits of CRP: smoking, lipids and SD.

The last-mentioned subunit is made up of a cardiologist, a psychiatrist, a urologist (andrologist) and a nurse.

Men are asked to complete a questionnaire on ED (SHIM) [3] 4 weeks after starting CRP. The waiting period is based on the experience that patient has become physically and psychologically stable after that time.

The SHIM (Sexual Health Inventory for Men) analyses sexual capacity to achieve and maintain an erection and complete intercourse. It consists of 5 questions and in each one patient evaluates himself from 0 to 5 points. ED is considered to be present when the number of points does not exceed 20.

Those who do not reach these values are reviewed in a specific consultation directed by a cardiologist. The professional asks about subjective sensation of dysfunction. If the answer confirms ED and patient accepts the possibility of treatment, studies are started.

The analysis includes data on heart disease, other added diseases, results of exercise testing and psychological questionnaires, as well as treatment to which they are subjected.

If there is evidence of significant depression, specialised management of the disorder, by psychologist or psychiatrist, is prioritised.

If physical capacity, measured in exercise testing at the beginning of the programme, is higher than 6 METs and there is no ischemia below these values, the possibility of treatment can be considered, since it seems to be demonstrated that energy expenditure in coitus with the regular partner is between 3 and 5 METs and the incidence of arrhythmias is similar to those that occur during daily activities.

We initiate therapy with medium dose of phosphodiesterase 5 (PDE-5) inhibitors if there is no contraindication to medication (nitrites). In cases where treatment is not possible, other types of actions are considered (oral apomorphine, vacuum systems, intracavernous injections, prosthesis), provided that there is no evidence of myocardial ischemia below 6 METs. In cases where it is not possible to use PDE-5 inhibitors, they will be treated by andrologist (Figure 1).

RESULTS AND DISCUSSION

There is enough evidence of the positive effects of CRPs on sexuality, in times prior to appearance of sildenafil (year 1999).

Thirty percent of Hellerstein and Friedman [4] patients report that quantity and quality of sexual activity improves after rehabilitation. Stern and Cleary [5] found a significant ($p<0.01$) increase in sexual activity in rehabilitated patients compared to control group.

In 1992 in our Unit [6], 180 infarcted patients, divided into two groups at random, showed that sexual activity was significantly better, in the rehabilitated group, at 3 months ($p<0.05$), at one year ($p<0.05$) and at six years ($p<0.0005$). The percentage of ED was also lower ($p<0.02$).

In these publications, prior to appearance of PDE-5 inhibitors, lower incidence of ED was a consequence of improvement at physical and psychological levels.

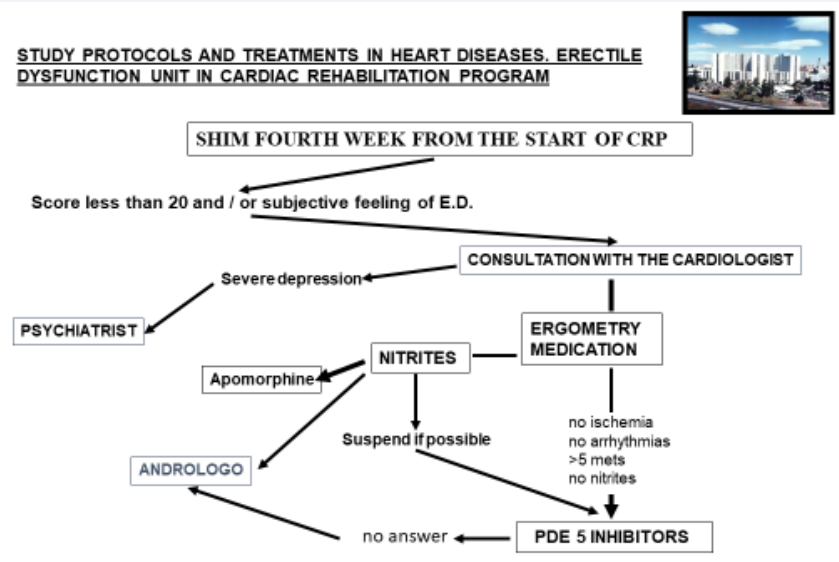

Figure 1 Study and treatment protocol in patients with sexual dysfunction included in the Cardiac Rehabilitation Program of the Ramón y Cajal Hospital and in the IRFLASALLE.

The study carried out at Hospital Ramón y Cajal in 2008, by Maroto et al [7], allows us to draw important conclusions in management of ED after myocardial infarction:1) prevalence of presentation exceeds 50%; 2) etiology is base on existence of risk factors for atherosclerosis, treatment followed and psychological alterations; 3) a good couple relationship could act positively in the solution of the problem; 4) it is essential that medical professionals give sufficient and good information.

Management of ED has improved significantly since appearance on the market of PDE-5 inhibitors (sildenafil, vardenafil, tadalafil, avanafil). They have shown to be very effective and with optimal results in percentages close to 80%. In our patients it was 75.27% and there were no complications of any kind with the taking of these drugs. A perfect planning of their use minimizes risks. Their administration is absolutely contraindicated in patients with acute or chronic nitrite treatment.

There are few studies that analyze impact of implantable cardioverter defibrillator (ICD) on sexual life. The device can have a positive effect by allowing patients and their partners to consider that possibility of sudden death during intercourse is controlled. However, ICD discharges can affect the frequency and quality of sexual relationship, similarly to what happens to the quality of life. Fear of therapeutic or inappropriate discharges from the device and the possibility of affecting both partners during intercourse delays the onset of sexual activity.

Fries et al. [8], describe that recurrence of ventricular tachyarrhythmias in patients with ICD occurs at a rate of 26% with exercise, 24% after psychic stress and 2% with sexual activity.

Our findings did not reinforce these results [9]. We believe that multidisciplinary cardiac rehabilitation programs improve quality of life of ICD carriers and offer great benefits in the sexual sphere.

Analyzing different actions of CRPs, we could define several conclusions.

Performance of an initial exercise testing and training, in absence of discharges, enhances safety of the couple, added to the knowledge that ICD would prevent them from dying if an episode of ventricular fibrillation occurred.

Direct effects of physical training favour control of ventricular arrhythmias, as a consequence of increase in parasympathetic activity with an increment in RR variability, elevation of ischemia threshold, decrease in the level of catecholamines and the improved neurovegetative response to stress [2].

Perfect planning of training, especially in patients with very poor functional capacity, increases duration of the program. In return, we obtain an unquestionable improvement in results with a clear increase in aerobic functional capacity, decreasing subjective sensation of dyspnea of the NYHA classification.

CRP facilitates control of psychological disorders. Percentages of 46% anxiety and 41% depression have been described in ICD carriers [10]. There is evidence that these psychological abnormalities can trigger ventricular tachyarrhythmias and ICD discharges [11]. A vicious circle can exist: anxiety and depression produce arrhythmias and discharges from the device and as a consequence greater psychological instability is produced. Cognitive-behavioral therapy, as individual therapy, has been shown to be effective in treatment of ICD patients [12].

In 2013, the American Heart Association (AHA) published a consensus document outlining the desirability of explaining to couples the possibility of maintaining sexual activity based on etiology of heart disease. For them, information for ICD carriers is an IIA indication, with a level of evidence C [13].

The document published by the AHA is very useful since it clearly establishes situations in which it is considered safe to resume sexual activity, the time periods and the risk profile for sexual activity depending on the type of heart disease [14].

Cardiac Rehabilitation Programs, class I indication of the Societies of Cardiology, have shown that they improve quality of life of patients and their prognosis in ischemic heart disease. SD can be improved, by its actions on a physical, psychological and informative level.

REFERENCES

1. Maroto JM. Disfunción sexual en el cardiópata. En, Rehabilitación Cardiovascular. Maroto, de Pablo, Eds. Editorial Médica Panamericana-Madrid. 2011. 571-28.
2. Maroto-Montero JM. Indicaciones y protocolos actuales de rehabilitación cardíaca. En: Maroto Montero JM, editor. Rehabilitación cardíaca. Madrid: Sociedad Española de Cardiología; 2000. 1-18.
3. Day D, Ambegaonkar A, Harriot K, McDaniel A. A new tool for predicting erectile dysfunction. Adv Ther. 2001; 18: 131-9.
4. Hellerstein HK, Friedman EH. Sexual activity and the postcoronary patients. Arch Intern Med. 1970; 125: 987-99.
5. Stern MJ, Cleary J. National Exercise and Heart Disease Project. Psychosocial changes observed during a low-level exercise program. Arch Intern Med. 1981; 141: 1463-8.
6. Jimenez-Nacher JJ, Barrios V, Artigao R, De Pablo C, Lafuente C, Morales MD, et al. Cardiac rehabilitation improves sexual activity in coronary patients. Eur Heart J. 1992; 13: 281.
7. Maroto-Montero JM, Portuondo-Maseda MT, Lozano-Suárez M, Allona A , de Pablo-Zarzosa C , María D. Morales-Durán MD y col. Disfunción eréctil en pacientes incluidos en un programa de rehabilitación cardiaca. Rev Esp Cardiol. 2008; 61: 917-22.
8. Fries R, König J, Schäfers HJ, Böhm M. Triggering effect of physical and mental stress on spontaneous ventricular tachyarrhythmias in patients with implantable cardioverter- defibrillators. Clin Cardiol. 2002; 25: 474-8.
9. Maroto-Montero JM, Marta Maroto-de Pablo M, Starling-Duarte J, Prados-Cabiedas C, Villahoz-Garcia C, Cabrero-Soblechero L, Sánchez-Corbal Mycol. Actividad sexual en pacientes con desfibrilador automático implantable incluidos en rehabilitación cardiaca Arch. Cardiol Méx. 2018; 88:116-23.
10. Bilge AK, Ozben B, Demircan S, Cinar M, Yilmaz E, Adalet K, et al. Depression and anxiety status of patients with implantable cardioverter defibrillator and precipitating factors. Pacing Clin Electrophysiol. 2006; 29: 619-26.
11. Dougherty CM. Psychological reactions and family adjustment in shock versus no shock groups after implantation of internal cardioverter defibrillator. Heart Lung. 1995; 24: 281-91.

12. Lewin RJ, Coulton S, Frizelle DJ, Kaye L and Cox Hl. A brief cognitive behavioral preimplantation and rehabilitation programme for patients receiving an implantable cardioverter- defibrillator improves physical health and reduces psychological morbidity and unplanned readmissions. Heart. 2009; 95: 63-9.

13. Steinkeir EE, Jaarsma T, Barnason SA, Byrme M, Doherty S, Dougherty CM, et al. Sexual counselling for individuals with cardiovascular disease and their partners. A Consensus Document From the American Heart Association and the ESC Council on Cardiovascular Nursing and Allied Professions (CCNAP). Eur Heart J. 2013; 34: 3217-35.

14. Glen N. Levine, Elaine E. Steinke, Faisal G. Bakaeen, Biykem Bozkurt, Melvin D. Cheitlin, Jamie Beth Conti, et al. American Heart Association Council on Clinical Cardiology, Council on Cardiovascular Nursing, Council on Cardiovascular Surgery and Anesthesia and the Council on Quality of Care and Outcomes Research. Circulation. 2012; 125: 1058-72

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