

EDITORIAL

“Patients referred for cardiovascular rehabilitation are around 50 to 60 years old on average... [T]he median age for heart failure patients is close to 80 years; thus, more than half of patients hospitalized for heart failure are older than 80. These patients have problems getting around—an obstacle to outpatient cardiac rehabilitation. They often have a number of comorbidities such as orthostatic hypotension, dementia, renal failure, and anemia, and their frailty means that programs must be adapted to their phenotype.”

Cardiac rehabilitation: current situation and future challenges

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Cardiac rehabilitation has a very important, albeit underestimated, effect in cardiology to improve risk factors, symptoms, quality of life, and exercise tolerance, and also to reduce readmissions and to improve prognosis of the patient through its components—physical activity and therapeutic education in particular.^{1,2} This is why in heart failure, coronary heart disease, or other diseases rehabilitation is often recognized by guidelines, with an indication of grade IA.³⁻⁵ However, the studies carried out in different European countries show in common that use of rehabilitation remains extremely low compared with what could be expected. For example, after myocardial infarction, the rate, which varies among different European countries, is around 30% in the countries of Western Europe. With regard to heart failure, the rates are much lower, on the order of 10%.⁶

The obstacles to rehabilitation are well-known⁷: low number of centers, low financial rewarding, problems due to distance, financial support, and incompatibility with work, social, or professional life. Another obstacle is the ignorance of doctors and the health authorities as to rehabilitation's value. This issue of *Medicographia* discusses some of these points, as well as some possible avenues to solutions.

Carlo Vigorito addresses the problem of rehabilitation in elderly subjects. Indeed, patients referred for cardiovascular rehabilitation are around 50 to 60 years old on average. According to heart failure epidemiology, the median age for heart failure patients (in different heart failure registers) is close to 80 years; thus, more than half of patients hospitalized for heart failure are older than 80. These patients have problems getting around—an obstacle to outpatient cardiac rehabilitation. They often have a number of comorbidities such as orthostatic hypotension, dementia, renal failure, and anemia, and their frailty means that programs must be adapted to their phenotype. However, the progressive aging of the population necessitates that this problem be solved, especially as the benefit would probably be even higher in these elderly patients.⁸ Some European programs have been developed in an attempt to ameliorate this problem.⁹

Women are other patients that tend to be sidelined in cardiac rehabilitation, as Regina Dalmau of Madrid reminds us in her article. Heart disease is the leading cause of death in American women. The rates of referral in rehabilitation and for adherence are generally lower for women than for men for various reasons already mentioned; however, it is also possibly due to larger cultural or family problems faced by women that the female sex benefits less from cardiovascular rehabilitation.^{10,11} It is likely possible to very significantly reduce the difference in the care of men and women in car-

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diac rehabilitation.¹² Problems with rehabilitation also arise among young subjects.¹³ Heart disease occurs earlier and earlier as a result of smoking, and it is not uncommon for myocardial infarction in men and women to occur between 20 and 40 years of age. In this age group where patients are in excellent condition before their cardiac event, the need for cardiac rehabilitation after an acute event—whether hospital or outpatient—is not obvious for many doctors, patients, and health authorities. Even in the absence of acute coronary syndrome, the management of simple coronary recanalization by stenting involves therapeutic education, physical activity education, and risk factor control, which are best performed in outpatient cardiac rehabilitation programs. However, there is a difficulty in including these young people in rehabilitation programs or in their completing the entire program. Even in a young subject, the beneficial effects of rehabilitation are maintained. Rehabilitation is not only retraining with physical effort; it is also an “overall” education. In most cases, a young person has a much longer life expectancy than an elderly person after a cardiac event. Cardiac rehabilitation in the young is addressed by Dr Luis Gowdak of Brazil.

To improve the situation, the European Society of Cardiology (ESC) and the European Association of Preventive Cardiology (EAPC) have launched initiatives such as the EU-CaRE program—European Study on the Effectiveness of Sustainability of Current Cardiac Rehabilitation Programs in Elderly Patients. The goal is to improve the quality of life and independence of coronary patients over 65 years of age. A network of European experts from seven countries has begun this work. The objective is to compare, improve, and adapt rehabilitation programs for these patients. In addition, the results of this study are expected to confirm the effectiveness of rehabilitation in the elderly. This initiative is detailed by Dr Marie-Christine Iliou of Paris.

Finally, in 2019, with e-Health continuing to develop more and more, the question arises as to whether the new “connected” tools bring an additional benefit compared with the usual program of cardiac rehabilitation, whether ambulatory or hos-

pital based. Will these connected objects resolve most problems of low referral of cardiac rehabilitation? Among these new initiatives, telerehabilitation seems particularly promising.^{14,15} Indeed, if proven to be effective, it would partially address the problem of the small number of rehabilitation programs in different countries.

Several telerehabilitation initiatives have been carried out and meta-analyses have been published. It remains to be seen whether telerehabilitation is feasible and effective. In all studies, home-based telerehabilitation is usually preceded by hospital rehabilitation in order to familiarize the patient with the physical activity required. An essential element is the distribution of leaflets detailing the level of activity to be performed, as well as the required monitoring of heart rate. Usually, it is the telemedical team that contacts the patient on a regular basis by phone or email. However, sometimes it is rather the patient that makes contact with the team. Patients must constantly monitor their heart rate and level of physical activity.

There are various methods of teletransmission. More and more, smartphones are replacing heart rate monitors. The options are extremely diverse; even gaming systems are possible, for example, video games like those available through Nintendo Wii Fit.

Considering all such systems to have simplicity on their side, the question then arises of the safety and efficiency of rehabilitation with such systems.^{16,17} As patients would not be under medical control, safety becomes an issue, especially in the most severely ill patients; so far, the published data do not seem to show any particular problems as regards type of death or arrhythmia. Nevertheless, minor events such as non-dangerous arrhythmias could be missed. In terms of efficacy, the literature is relatively limited and mainly concerns low-risk patients. Overall, the effects do not seem to be smaller than those of outpatient rehabilitation in hospitals with regard to quality of life or improvement in exercise tolerance. Continuing developments in e-Health in regard to cardiac rehabilitation will be interesting to follow. ■

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