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EDITORIAL COMMENT

The economics and costs of patient referral protocols for cardiac surgery☆

A economia e os custos das redes de referenciação de doentes para cirurgia cardíaca

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The aim of the study in this issue of the *Journal* by Amado et al.[1] of the Cardiology Department of Faro Hospital was to compare their experience of patient referrals for cardiac surgery between January 1, 2008 and September 30, 2014, divided into two groups: those referred between January 1, 2008 and August 1, 2011 (43 months; 557 patients) and those referred between August 1, 2011 and September 30, 2014 (37 months; 307 patients). The division into two time periods was prompted by changes to referral protocols issued by the Regional Health Authorities.

Although it is not specifically stated in the article, it appears that patients were preferentially referred to a particular hospital in Lisbon during the first period and to a different one during the second period. For reasons that are not explained, the number of patients referred in each period is not proportional to the length of the period, but this may be due to a broadening of the referral network in the more recent period.

The demographic and clinical characteristics of the two patient groups were similar but the mean waiting time increased from 10.6±18.5 days in the first period to 55.7±79.9 days in the second, which led to a significant difference in morbidity, as reflected in hospitalizations (0.4% and 9.1%, respectively) and mortality (0% and 2.3%) while awaiting surgery. However, waiting times in urgent cases were not dissimilar (2.1 vs. 3.0 days), and there appears to have been no significant difference between the groups in surgical results or follow-up after surgery in this study population, even though some authors have shown that longer waiting times are often associated with worsening clinical status and hence worse surgical outcome.[2]

These findings are hardly surprising; increased mortality and morbidity while awaiting cardiac or other surgery is a well-known problem that has been widely discussed in the medical literature[3] and has prompted considerable efforts everywhere to shorten waiting lists and times. Most national and international guidelines on myocardial revascularization now recommend a maximum wait of two weeks for urgent cases and six weeks for elective cases.[4]

However, classifying cases as urgent or elective is a highly subjective process. Malaisrie et al., of Northwestern Memorial Hospital, Chicago, found that prolonged waiting time for aortic valve replacement (AVR) was associated with greater mortality (3.7% and 11.6% at one and six months' wait, respectively) than AVR operative mortality, although waiting time was not associated with poor operative outcomes after AVR. They recommended that patients should receive AVR on a semi-urgent, not elective, basis.[5]

The Portuguese Societies of Cardiology and of Cardiothoracic and Vascular Surgery recently formed a joint working group with the aim of implementing such recommendations in Portugal, and the group presented a document at the last Portuguese Congress of Cardiology recommending the same waiting times as mentioned above. However, the waiting

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times during the second period analyzed by the Faro group were far longer.

The problem is not restricted to Portugal; it is found everywhere, even in more developed countries, some of which have even longer mean waiting times than in this country. Some years ago, this issue was the subject of heated political debate in Spain, which resulted in a substantial reduction in waiting times for cardiac surgery. It should be noted that cardiac surgery is the best surgical specialty in Portugal in terms of the size and length of waiting lists, although this does not mean that we cannot do much better. It may be that the harmful effects of lengthy waiting times are more evident in this specialty than in others.

The organizational models of the country's cardiothoracic surgery departments vary (that of Coimbra University Hospitals is well known), as do the reasons for the length of their waiting lists, but this is not the place to analyze them. I would only say that in my opinion some of the difficulties could easily be overcome, not only by enlisting the help of national and regional health authorities, but also by addressing certain organizational aspects that are the sole responsibility of the departments themselves.

The comparative study by our colleagues in Faro has certain limitations, the most important of which is the fact that the two cardiothoracic surgery centers to which most patients were referred, one private and one public, have completely different characteristics. Obviously, private facilities cannot afford the luxury of long waiting lists and are therefore organized differently. This then raises the question as to why all patients should not benefit from such a service, but this is not what happens in Portugal, and I do not know if it would be possible. Indeed, the cardiology department of Faro Hospital was in a privileged position in this respect for a long time.

In addition, one point that appears to have been neglected by the joint working group of the two medical societies involved is the time between the onset of a patient's symptoms and an appointment with their family physician, and from then to a cardiology consultation and then to a definitive diagnosis, all of which must be taken into account in terms of waiting times for surgery. This point was also not mentioned by our colleagues in Faro. Without going into details, it does not seem reasonable to me that this should be left out of the equation, assuming that their wait times are comparable to most other cardiology departments.

Unfortunately, the authors did not even attempt to answer the question they themselves posed in the article's title, as to whether ''... financial considerations come at a cost'', probably due to the lack of data. Apparently, the decision to change the referral system for patients in Faro was made ''for economic reasons, in an attempt to reduce national health system costs'', implying that the amounts being paid to the private hospital exceeded the prices set for national health service-funded services. We are therefore left wondering whether increased hospitalizations cancel out or even produce the opposite effect of what was intended, even before taking into consideration the impact of waiting times on the personal finances of individual patients, which has repercussions for the country's economy in general, not to mention the effect on mortality, which cannot be quantified in financial terms. That would be a study well worth doing.

In Canada, Sampalis et al. demonstrated that compared to baseline scores, patients who waited longer for coronary artery bypass grafting (CABG) had significantly reduced physical functioning, vitality, social functioning, general health and mental health; they also found that longer waits before CABG were associated with an increased likelihood of not returning to work after surgery.[6]

Finally, one issue that is often ignored in any discussion is the impact of social inequality on waiting times. Petrelli et al. reported that in Italy the conditional probabilities of undergoing surgery were lower among people with low and middle education levels than for more highly educated people after adjustment for gender, age, comorbidities and time on the waiting list.[7] Pell et al. came to similar conclusions in the UK.[8]

It is therefore essential that Portugal's cardiologists and cardiothoracic surgeons work together to establish referral protocols based on the capacity and availability of surgical departments rather than on bureaucratically defined rules, a practice that in fact already exists based on individual personal relationships. It is not as if this were against the law, and it should be taken into account in the directives issued by both central and regional health authorities. I admit I have met little resistance in this respect, least of all from patients whose main concern is to have their cardiac problems treated as quickly as possible, irrespective of where this is done.

It is thus incomprehensible to limit patient referrals to facilities that already have longer than recommended waiting lists rather than referring them to one with a shorter or no waiting list. It also restricts patients' freedom to choose the center that can best respond to their needs and which may also lead to better outcomes. Portugal is too small a country for such inequalities in health care and the national health service must be able to respond appropriately and promptly to its patients' needs. However, if this is deemed impossible, then let us use private health facilities, negotiating financial terms that the system can support.

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