EDITORIAL

Infective Endocarditis: Epidemiological Changes and New Challenges Derived from the EIRA 3 Study

Endocarditis infecciosa: Cambios epidemiológicos y nuevos retos. A propósito del estudio EIRA 3

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Infective endocarditis remains a challenging disease. In recent decades, much progress has been made in the diagnostic process, the clinical condition has been better defined and surgical indications have been agreed-upon in the different clinical practice guidelines. (1, 2) However, mortality has not improved. Epidemiological changes explain this situation. Streptococcal endocarditis in a young patient with rheumatic valve disease, which currently would have a good chance of resolving well, is very rare nowadays. The endocarditis we encounter at present affects older patients, often with important comorbidities, the access route for the disease is some process related to health care in a high percentage of cases, acute endocarditis caused by staphylococci has grown and infections in prostheses and devices have increased. All this challenges professionals who face very complex clinical cases and must make very difficult decisions.

The EIRA 3 study by Avellana et al. (3) shows that the epidemiological changes experienced by endocarditis in Argentina are in line with those observed in other countries. (4, 5) In comparison with the previous EIRA 1 (6) and EIRA 2 registries, (7) the age of the patients has increased and the number of cases of endocarditis in patients who were unaware they were carriers of valve lesions, as well as those due to staphylococcal infection, associated to health care and in prostheses and devices have multiplied. The EIRA 3 study also shows that the diagnostic process and the management of the disease have substantially improved: the diagnosis was made within the first month of symptoms. This could be due to the higher number of acute cases, but undoubtedly a better diagnostic suspicion and the greater use of transesophageal echocardiography have certainly contributed to this progress. It is also noteworthy that surgical treatment was performed in 43% of cases (24% in the EIRA 2 study), and in addition, in 34% of cases surgery was carried out in the first 7 days of treatment. Mortality, however, remains high (25%) and unchanged from previous registries. The results about the need for surgery and mortality are similar to those obtained at the Vall d'Hebron Hospital in Barcelona (8) and are repeated in many other countries.

What can we do to modify this prognosis? In my opinion it is necessary to insist on four fundamental aspects:

1. Prevention measures.

Prevention measures go beyond traditional antibiotic prophylaxis. (9) In fact, the effectiveness of the latter has been questioned and its use is restricted to certain subgroups of patients. (1, 10) Antibiotic prophylaxis, if it were useful, would only prevent the forms of streptococcal endocarditis in patients who are aware of being carriers of heart valve disease (a minority of the cases we see today). Prevention should include the care of the venous access catheters, urethral catheters and medical instrumentation in general in hospitalized patients. To achieve this, it is important to inform the medical and nursing staff about the severity of the disease and the important role they can play in trying to avoid one of the most serious forms of endocarditis, which is the one associated with medical care. (11)

2. Early diagnosis. Education.

Patients with prostheses, heart valve diseases or congenital heart disease should know the risk of endocarditis and how to proceed in case of fever. In case of unexplained fever they should have fast access to blood culture and echocardiogram. They should also be explained the risk involved in undergoing piercings or tattoos, the need for good dental hygiene and measures of antibiotic prophylaxis if they belong to high-risk groups. (1)

In all patients with compatible clinical symptoms, blood cultures and echocardiography should be a priority.

In hospitalized patients, all patients with positive blood cultures should be monitored, especially if they are positive to microorganisms usually responsible for endocarditis. If patients are admitted to hospital areas unfamiliar with endocarditis (which is relatively frequent, since it can have diverse initial clinical manifestations), the diagnosis can be delayed excessively unless the endocarditis team warns of this diagnostic possibility.

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3. Risk assessment at the time of diagnosis.

The variables that indicate the risk of endocarditis are present at the time of diagnosis: factors that depend on the patient (age, comorbidities and heart valve prostheses), presence of cardiac or extracardiac complications, echocardiographic findings (large vegetations, periannular complications, abscesses, fistulas) and the responsible microorganism. Risk stratification at the moment of diagnosis will facilitate, if necessary, a quick consultation with the cardiac surgeon and will allow deciding the possible prompt transfer of the patient to a center where he can receive more specialized treatment and surgical intervention in case of need. A recent work allows stratifying the risk in a very simple way (12) and can help to make the right decisions immediately.

4. Potentiation of endocarditis units.

The joint work of the microbiologist, internist, cardiologist, imaging expert and cardiac surgeon is fundamental. (13) The units should be responsible for patient monitoring during admission and the therapeutic decisions adopted, and should help nearby centers that do not have certain imaging or surgical techniques, providing advice on treatment and facilitating transfer if surgery is necessary. Undoubtedly, care in specialized centers would avoid errors and improve the prognosis. (14) Teamwork in these units and coordination with other hospitals is a great stimulus for the professionals involved and it is also useful for hospitals to acknowledge the severity of endocarditis and promote improvement measures.

I believe that studies such as EIRA are an example. Only by having a full knowledge of the disease will we be able to approach the future. It is expected that when the EIRA 4 is carried out in a few years we may have managed to improve the prognosis of this terrible disease.

CONFLICTS OF INTEREST

None declared.

(See authors' conflicts of interest forms on the website/Supplementary material).

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