

## Endocarditis treatment

Infective endocarditis (IE) is a severe condition with high morbidity and a high in-hospital and 5- year mortality. Part of the strategy to decrease mortality is early diagnosis, adequate antimicrobial treatment and best surgical timing as well as access to surgery. Establishing the causative pathogen is of paramount importance, and in most settings routine blood cultures are used for this purpose, although other sites may be cultured, such as distant emboli. Besides this, serological diagnosis may be important in suggestive epidemiological scenarios, especially for *Bartonella spp* and *Coxiella burnetii*.

Knowing the pathogen and its sensitivity profile helps optimize antimicrobial treatment, potentially reducing adverse events related to antibiotic toxicity and prolonged use of intravenous lines. Guidelines dealing with treatment are produced every so often by experts, and pathogen-oriented antibiotic treatment guidelines are very useful, and updated regularly. However, unfortunately, guidelines are not systematically followed. Recently Tissot Dupont has reviewed this aspect researching 13 centers with expertise on managing endocarditis, with more than 50 cases/year, mostly in Europe. Despite the fact many of the experts in these centers actually are part of the panel producing the guidelines, concordance in treatment was low, especially for difficult pathogens, such as staphylococci (adherence to guidelines of 54 to 62 %) and in patients whose blood cultures were negative, especially when IE was hospital acquired (adherence to guidelines of 0 to 15%).

In Europe, the incidence of blood culture-negative IE (BCNE) has been reported to vary between 9% and 25%; in middle-income countries, BCNE accounts for 23 to 69.7% of cases of IE. Therefore, BCNE occurs more frequently in developing countries and presents a major clinical challenge for diagnosis and treatment. The fact that in a large proportion of cases blood cultures do not show growth means that empirical treatment often will be continued, as no further information regarding the pathogen will be obtained. Therefore, getting empirical treatment right is very important. We propose, in the protocol published in this issue, a practical guide to empirical therapy for infective endocarditis. Our

practice is in a middle income country, where viridans group streptococci are still the most frequently isolated pathogens in subacute native valve endocarditis and late onset prosthetic valve endocarditis, followed by enterococci; in acute native valve endocarditis, staphylococci predominate, especially *S.aureus*, whereas in early onset prosthetic valve endocarditis, coagulase negative staphylococci, Gram negative pathogens and *Candida spp* also occur. In this aspect, we follow the American and European guidelines, making choices to simplify and at the same time, adapt them to our local peculiarities.

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