Prophylaxis for Hypertrophic Cardiomyopathy and Infective Endocarditis: From Recommendations to Implementation

To the Editor:

Hypertrophic cardiomyopathy (HC) is recognized as potentially leading to development of infective endocarditis (IE). Although they do not provide an exact figure on the level of risk, current clinical practice guidelines suggest it is at least moderate[1-2] and recommend antibiotic prophylaxis when HC coincides with circumstances favoring bacteremia by organisms that tend to colonize the endocardium.[3] However, a review of the literature suggests fulfillment of this recommendation is less than satisfactory.[4]

Clearly, only a minority of patients presents this complication initially and this impedes prevention. We recently attended one such patient: an apparently healthy young man presenting prolonged azythromycin- and amoxycillin-clavulanic acid–resistant fever. One day previously he had had syncope and 2 months earlier had undergone dental extraction. On admission, his condition was serious although he presented no apparent focus of infection. Baseline ejection murmur was heard. Obstructive HC and mitral endocarditis were diagnosed following echocardiography and his clinical condition and the echocardiogram indicated urgent valve surgery.[5]

In this patient, the omission was inevitable and cannot be criticized; what is arguable is the attitude of the majority who, knowing patients are at greater risk, do not try to avoid it. Apart from the aforementioned consensus documents, literature on this topic is clearly limited to small-scale studies that present differing results and offer dubious arguments for or against established recommendations.[1]

For example, we know that overall endocarditis affects 1-5/100 000 inhabitants but few studies quantify incidence in the presence of HC and even fewer set risk at 0.38% persons/year in obstructive HC and 3 times that in the presence of left atrial dilatation.[6] Obviously, IE leads to increased morbidity and mortality in HC but this association with mortality has yet to be reliably documented. Two essential factors condition the worse prognosis: firstly, possible late diagnosis because its special characteristics make suspicion less likely. Mitral vegetations tend to form on the ventricular surface[6] (as occurred in this patient) and generate or exacerbate subaortic gradient which appears with ejection murmur and syncope but not with data indicating valvular regurgitation. Secondly, resistance to appropriate antibiotic treatment often makes valve surgery,[5] and a consequently higher rate of mortality, unavoidable.

Logically, then, the greater level of risk makes intervention to prevent endocarditis necessary. However, the actual rate of prevention remains minimal (seldom >40% of patients indicated) in the face of the multitude of high-risk interventions performed, fundamentally oral procedures with bleeding.[3] Despite this, only 14%-20% of all IE is of oral origin,[7] which questions the need for antimicrobial treatment.

Consequently, we should consider the risk/benefit ratio of antibiotic treatment. We have found no reliable data on the efficacy of prophylaxis in terms of the number of cases of avoidable endocarditis[1]; one of the most relevant studies concludes that application of US recommendations would lead to 91% effective prevention in patients with HC.[8] In addition, the potentially harmful effect of the drugs is limited and hypersensitivity to beta-lactam antibiotics has been put at 0.04%-0.11%.[9] Etiological studies of mortality following aggressive oral treatments in these patients report heterogeneous results in terms of figures but overall find significantly greater IE-associated morbidity and mortality by comparison with antibiotic toxicity[7,10]; an apparently logical finding if we recall the greater seriousness of endocarditis in the presence of HC.

While recognizing the limitations of the information available, we nonetheless feel this is sufficient to deduce that chemoprophylaxis is safe and efficient when administered to carefully selected patients. Independently of the exact figures for cases of endocarditis avoided, which may not be high, the seriousness of the symptoms makes prevention vital. Current rates of prevention are unacceptable and oblige us to strive for better fulfillment of guideline recommendations.

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