Electrocardiography Plus Limited Echocardiography in Young, Newly Identified, Hypertensives: Some Considerations

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To the Editor: The article by Leese et al. titled “Cost-Effectiveness of Electrocardiography vs. Electrocardiography Plus Limited Echocardiography to Diagnose LVH in Young, Newly Identified, Hypertensives”1 provided an economic analysis of diagnosing left ventricular hypertrophy (LVH) in cohorts of white and black hypertensive patients by using electrocardiogram (ECG) plus limited echocardiography compared to only ECG, using the outcome of cost per additional correct diagnosis.

The authors aimed to evaluate newly diagnosed, low-grade hypertensive patients under 50 years of age. The sample used for their analysis was based on a study by Chapman et al.2 They concluded that LVH detection by ECG plus limited echocardiography may be an economically feasible alternative to ECG due to increased accuracy. In fact, in patients without ECG-LVH, ECG plus limited echocardiography yielded base-case values of $655 and $829 per additional correct diagnosis, in black and white cohorts, respectively.1 However, some remarks may need to be added. As the authors acknowledge, their analysis was restricted to US-based reimbursement systems, which induces difficulties in extrapolating the results to non-US systems. In this regard, the authors emphasized that, in the United States, screening for LVH in newly diagnosed hypertensive patients is performed by using ECG, while European hypertension guidelines3 make stronger recommendations for using echocardiography in screening for LVH.

In fact, the European Society of Hypertension/European Society of Cardiology 2007 guidelines state that ECG should be a part of the routine assessment of all hypertensive subjects in order to detect LVH, patterns of “strain,” ischemia, and arrhythmias, whereas echocardiography is only recommended when a more sensitive detection of LVH is considered useful; it is thus presented as second level exam.3

Leese et al. observed that enhancing the detection of LVH in newly diagnosed, stage I hypertensives, under 50 years of age, may be very relevant for correct cardiovascular (CV) risk stratification in patients initially thought to be at lower risk. In this regard, in a study by Cuspidi et al., 580 untreated patients with grade 1–2 hypertension, free of diabetes, CV diseases, renal insufficiency, and ECG-LVH, underwent echocardiography in order to detect LVH, which had an overall prevalence of only 14.8%. Because echocardiography had very limited impact on risk stratification and too high costs in the subgroup with age under 50 years, the authors concluded that systematic use of echocardiography in untreated hypertensive patients at low or medium risk may result in highly expensive screening.4 Further, extensive evaluation of these populations would lead present substantial organizational difficulties to echolaboratories.

Beyond the purpose of a short-term outcome of cost per additional diagnosis,1 a clinically oriented reader may have difficulty in interpreting the results without information about the prevalence of LVH detected by either ECG or ECG plus limited echocardiography.

Lastly, if we assume that low-risk, newly diagnosed, stage I hypertensive patients should undergo echocardiography for a more correct assessment of CV risk, thus to avoid potential undertreatment, why should we perform a limited exam, missing information on diastolic function? Moreover, beyond economic considerations, in our experience, limited echocardiogram does not consistently shorten the execution time of the exam.

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