CORRESPONDENCE

The Diagnosis of Chronic Coronary Heart Disease

by Prof. Dr. med. Christian Albus, Prof. Dr. med. Jörg Barkhausen, Prof. Dr. med. Eckart Fleck, Dr. rer. medic. Jörg Haasenritter, M. Sc. N., Dipl. Pflegewirt (FH); Prof. Dr. med. Oliver Lindner, and Prof. Dr. med. Sigmund Silber in issue 42/2017

The Importance of Ergometry Was Underrated

We read with great interest the new clinical practice guideline on the diagnosis of chronic coronary heart disease (CHD) (1). Unfortunately, important aspects were not considered sufficiently in the article.

A look at the original articles on which the statement “chronic CHD is the cause of the pain in 8–11% of chest pain patients” is based throws up methodological weaknesses. The presence of CHD was not (invasively) excluded in all persons. Haasenritter et al. (2) themselves named as a limitation that only some patients had undergone relevant diagnostic evaluation for CHD. In the article by Bösner et al. (3), the diagnosis of CHD was not excluded with absolute certainty in all patients. Consequently, a panel decided on the “most probable underlying medical cause for chest pain.” The prevalence of CHD in the populations under study are likely to have been notably higher in both studies.

The clinical practice guideline rightly points out the low sensitivity and specificity of an exercise electrocardiogram (ECG) for detecting CHD. This does not take into consideration the fact that in the context of ergometry, further important parameters are collected, which justify the use of the method: performance ability, or fitness, is an independent prognostic factor. Abnormal blood pressure response under exercise test conditions can also indicate CHD. A fall in blood pressure during an exercise ECG is indicative of severe CHD. Hypertension on exercise testing, by contrast, is a cardiovascular risk factor (4). Last, but not least, an exercise test (ideally in combination with lactate response or spiroergometry) can be used to guide the recommended exercise and intensity of training, which was unfortunately not mentioned in the clinical practice guideline.

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Conflict of interest statement

The authors declare that no conflict of interest exists.

Current Clinical Practice Is Different

This article (1) reminds me of the year 2002, when Dissmann and de Ridder in an article in the *Lancet* (2) denounced exactly what has at last been taken up as the subject of this guideline. Actual clinical practice in cardiology has absolutely no overlap with this guideline. Coronary angiograms and interventions without objective confirmation of ischemia or clinical relevance are elements of routine clinical practice for economic reasons. GPs are thus deprived of any way of exerting influence. One is likely to look in vain for the particular piece of patient information entitled “Do I need cardiac catheterization?” (3) in most cardiology clinics and practices.

Some passages are contradictory. The Marburg Heart Score is recommended for GPs, but this deviates in some items from what is shown in *Table 2* in the article. But the real question is: do we need all these calculations in routine clinical practice? As the article cautiously says: “When interpreting these score results, it is important to take the overall clinical picture into account.” Why should I conduct ergometry testing only when the pre-test probability is 15–30% if ultimately (luckily) it is clinical assessment that dominates?

Experience shows that ergometry during follow-up care does not allow for estimating the progression of coronary health disease with certainty, but it provides useful clues regarding physical conditioning, so as to identify weaknesses in the treatment, influence a patient’s lifestyle, and reduce fears.

In the meantime, it has become easier in many places to obtain an appointment for cardiac catheterization than for ergometry. But this takes me back to the start of my argument.

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In Reply:

Burgstahler and Nieß criticize the fact that the studies we cited in our article on the prevalence of coronary heart disease (CHD) in

general practice have methodological weaknesses. They assume that the actual prevalence is much higher than the 8–11% we cited. We wish to counter that by pointing out that the cited studies represent the best available evidence. In both studies, a delayed type reference standard in association with an independent panel of experts was used to define the diagnosis. The defined characteristics ensured validity, transparency, and reproducibility of the diagnosis (stringent and standardized follow-up of all participants for 6 months, assessment by an independent expert panel, etc). This type of method can be considered as adequate if, for example, not all patients can be invasively diagnosed, for ethical reasons (1, 2).

Burgstahler and Nieß further criticize that additional parameters that were collected in the context of ergometry testing (among others, performance ability, blood pressure behaviors, lactate) were not mentioned. Our counter-argument is that the possible prognostic use of the exercise electrocardiogram (ECG), including possible lactate testing, is undisputed, but it was not the subject of our article (3). We focused on the use of exercise ECGs in diagnosing stenosing CHD on the basis of a pathological depression of the ST segment. Furthermore, we focused on pure ergometry, as is conducted in general practice and specialty practice. In special patient populations and with extended options, ergometry is undoubtedly a method that has greater meaningfulness.

Wollmann sees a problem in the Marburg Heart Score (MHS), in that it deviates in some points from what is shown in *Table 2* (“pretest probability...”). We wish to point out that the MHS serves to assess the clinical probability of CHD at the general practice level, but that *Table 2* shows criteria to assess the pretest probability at the level of specialist cardiology practice. The patient populations are different. Expert opinion (4) and empirical findings (5) are a reminder that the meaningfulness of diagnostic tests can vary across different aspects of clinical practice.

He furthermore criticizes our cautious wording: “When interpreting these score results, it is important to take the overall clinical picture into account.” We would point out that considering the overall clinical picture is indicated in the interpretation of every and any diagnostic test. And in the case of clinical decision rules (such as the MHS), the risk of certain automatisms is even higher than in other diagnostic tests.

With regard to his comment, that in many places it is easier to obtain an appointment for cardiac catheterization than for ergometry, we wish to remind readers that we did mention non-invasive tests (among others, myocardial SPECT [single photon emission computed tomography], exercise echocardiography)

(3). Both tests are included in the repertoire of services covered by the statutory health insurers and are available nationwide in Germany. For this reason, it is possible to implement our diagnostic algorithm within acceptable waiting periods.

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