Autonomic Function in MVP

To the Editor:

The recent paper of Boudoulas et al.1 supports my view regarding abnormal autonomic function in mitral valve prolapse (MVP).2 Adrenergic hyperactivity may explain many of the clinical manifestations of MVP, including the associated arrhythmias and the changes in repolarization. Thirty-five patients underwent \( \beta \) blockade and 80% showed normalization or marked improvement in the ST-T changes. We were impressed by the striking similarity between the symptoms and ECG findings in MVP and cases of so-called neurocirculatory asthenia (NCA) and advised careful review of all cases labeled as NCA in order to exclude MVP. The high adrenergic tone explains the salutary effect of \( \beta \) blockers in symptomatic MVP; however, the cause of adrenergic hyperactivity in these patients remains unclear.

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References


Predictive Value of CK-MB Test

To the Editor:

Grande et al. (Circulation 61: 723, 1980) claim a predictive value of nearly 1.00 of a single CK-MB determination for detection of acute myocardial infarction. However, we cannot fully agree with the interpretation of the data. In our own experience,1 there are several drawbacks with regard to the CK-MB test in general and with regard to the antibody-inhibition test in particular. Exact knowledge of a diagnostic tool, with consideration of all possibilities of a positive test, is necessary, although situations referring to these misleading interpretations may be rare.

Elevated serum CK-MB levels may be present in the following situations not related to acute myocardial lesions:

1. Skeletal muscle trauma. In contrast to the paper mentioned by the authors,2 we and others3 could find an increase of serum CK-MB after skeletal muscle trauma. However, CK-MB levels after skeletal muscle trauma never exceed 5% of total CK at the time of peak CK-MB values. Therefore, elevated CK-MB measured by the relatively insensitive antibody-inhibition test (detecting CK-MB only if exceeding about 3 U/l) can be shown only if total CK exceeds about 100 U/l (i.e., relatively severe skeletal muscle trauma) and repeated tests (4-hour intervals) may be necessary for either detecting CK-MB or determining peak CK-MB values expressed as a fraction of total CK.

2. CK-MB can be detected even with levels exceeding 5% of total CK in the serum of patients with systemic skeletal muscle disease (e.g., dermatomyositis, polymyositis, Erb-Duchenne's skeletal muscle dystrophy).1,4-6 In systemic skeletal muscle diseases, skeletal muscle cells may contain a higher proportion of CK-MB,4 and an electromyogram as well as skeletal muscle biopsy with determination of CK-isoenzymes of skeletal muscle cells may be necessary to confirm the diagnosis of the diseases mentioned above.1 These diseases are rarely encountered in the differential diagnosis of acute myocardial ischemia, but patients with dermatomyositis or polymyalgia rheumatica sometimes present with muscle pain of upper extremities, thorax or shoulder muscles, which must be differentiated from cardiac pain.

3. In the state of circulatory shock irrespective of origin, the BB-isoenzyme of CK can be detected for short periods.5,6 Using the antibody-inhibition test (measuring the B-subunit after antibody inhibition of the M-subunit), CK-BB clearly is regarded as CK-MB.

In these cases, CK-BB is erroneously interpreted as CK-MB of cardiac origin simulating myocardial lesions or higher values of CK-MB, if shock is cardiogenic. The source of CK-BB in shock is unknown, but possible sources are the brain or smooth muscle of the bowel. Determination of CK-isoenzymes using other methods (agar-gel electrophoresis, ion-exchange-column chromatography) may be necessary to clarify the origin of CK-isoenzymes in shock.

These possibilities of occurrence of CK-MB in the serum, even if rare, have to be known for correct interpretation of elevations of CK-MB.

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References


The authors reply:

To the Editor:

We appreciate Dr. Zilcher et al.’s thoughtful comments. In this study we demonstrated (not claimed) that the predictive value of a serum CK-MB test is 0.98–1.00 in a large representative sample (401 patients) suspected of acute myocardial infarction (AMI). Zilcher et al. found slightly lower predictive values of CK-MB in their small series of 31 patients.5,6 The various possibilities of false-positive CK-MB (CK-B) values mentioned in their letter are all well known.4,6 CK-MB was measured by use of electrophoretic separation of the CK-isoenzymes in our study, so no false-positive CK-MB tests would occur due to CK-BB in serum. We agree that certain severe systemic skeletal-muscle diseases may give rise to false-
Predictive value of CK-MB test.
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