

CARDIAC MEMORY AS A DIFFERENTIAL DIAGNO- SIS: AN ELECTROCAR- DIOGRAPHIC PHENO- MENON THAT IS LITTLE DISCUSSED IN CARDIO- LOGY

Amanda Catharina Piazza

Universidade Brasil

Fernandópolis - SP

<https://lattes.cnpq.br/8324564082547226>

Marcela Camila de Andrade

Universidade Brasil

Fernandópolis - SP

<http://lattes.cnpq.br/6673860278257559>

Luiz Flávio Franqueiro

Universidade Brasil

Fernandópolis - SP

<http://lattes.cnpq.br/1722661033475559>

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INTRODUCTION

Cardiac memory (CM) or Chatterjee phenomenon, is a phenomenon that is not rare, but still little discussed and reported in studies and even less known in clinical practice. This phenomenon presents with reversible changes in the ventricular repolarization of the T wave on the electrocardiogram (ECG). Knowledge of this entity is extremely important for a correct diagnosis and to differentiate it from other diagnoses with more serious outcomes, such as myocardial ischemia.

GOAL

This summary aims to provide an overview of cardiac memory and the mechanisms involved in this electrocardiographic change. Furthermore, the purpose of this research is to raise awareness among both doctors and medical students of the existence of this phenomenon as a differential diagnosis in cardiology.

METHODOLOGY

To prepare this summary, a bibliographic review was carried out using PubMed. To ensure that the phenomenon is comprehensively and completely described, articles were chosen in Portuguese, English and Spanish. Furthermore, the selection of articles was careful, with the application of a publication date filter, with articles published in the last decade being chosen, with the aim of ensuring that the research reflected the most recent and relevant information available in the scientific literature.

THEORETICAL FOUNDATION

Dysfunction in the cardiac conduction system is a common manifestation in cardiology, covering a variety of conditions and diagnoses, with cardiac memory being one of the least known. This phenomenon was described in 1969 by Kanu Chatterjee, but only in 1982 did Mauricio Rosenbaum recognize and name the event as 'post-tachycardic changes in the T wave', highlighting its transient nature and its distinct electrocardiographic implications. Cardiac memory can be defined as a specialized remodeling as it is a transient electrocardiographic or vectorcardiographic finding, which can be recorded during normal ventricular activation, induced by a period of abnormal activation. This phenomenon can be triggered by a variety of factors, including transient left bundle branch block, ventricular stimulation by a pacemaker, the presence of ventricular extrasystoles, ventricular pre-excitation and episodes of tachycardia. The diagnosis of cardiac memory has a sensitivity of 92% and specificity of 100% when the electrocardiogram shows the following characteristics: positive T wave in lead AvL, positive or isoelectric T wave in lead I and maximum inversion of the T wave in the precordial leads superior to the lead III. However, in the clinical context, the diagnosis is already validated by the presence of a negative T wave after a physiological stimulation, which coincides with the polarity of the QRS after an abnormal ventricular stimulus. The diagnosis is confirmed after careful exclusion of other diseases that may present similar T wave inversions, such as myocardial ischemia, mitral valve prolapse, left ventricular hypertrophy, pericarditis, pulmonary embolism, myocardial contusion, myocarditis, septal hypertrophy apical, or the use of specific medications.

CONCLUSION

It is concluded that it is imperative that health professionals deepen their knowledge about the phenomenon of cardiac memory. Awareness about this event is fundamental, as it can lead to an early diagnosis and, consequently, a reduction in the need to apply unnecessary invasive procedures to patients. This phenomenon must be considered as a possible differential diagnosis in light of the electrocardiographic changes described previously. The diagnosis of cardiac memory

is based not only on the identification of the specific characteristics of the T wave, but also on the careful exclusion of other conditions that may present T wave inversion, such as myocardial ischemia, mitral valve prolapse, left ventricular hypertrophy, among others. Therefore, recognizing and understanding cardiac memory is essential to ensure quality care and accurate clinical decision-making, contributing to improving the cardiac health of patients around the world.

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