Massimo Fioranelli Gaetano Frajese *Editors* 

# Sports Cardiology

From Diagnosis to Clinical Management

Forewords by Jacob Shani Moussa Mansour

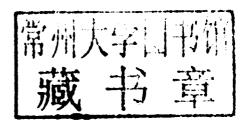


Massimo Fioranelli • Gaetano Frajese Editors

## **Sports Cardiology**

From Diagnosis to Clinical Management

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Editors

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### **Sports Cardiology**

I dedicate this book to all my colleagues, who are excellent cardiologists; their professional and personal commitment has enabled the development of the Mater Dei Heart Center:

Maria Bianchi, Caterina Bisceglia, Valentina Boccadamo, Fiorella Caranci, Giovanna Giubilato, Carlo Gonnella, Roberto Leo, Antonio Lucifero, Enrica Mariano, Augusto Mazzetti, Francesco Perna, Emiliano Pica, Maddalena Piro and Vittoria Rizzello

Massimo Fioranelli

#### **Foreword**

The field of sports cardiology gained notoriety over the last few years when several well-known athletes have succumbed to sudden cardiac death. The media attention to these events has inflamed the controversy of whether better screening would have prevented any of the deaths or whether the time has come for nations and health organization to agree on an universal approach.

Unfortunately there is no universal approach to screen athletes or the general population. There is no accepted method of screening people of different ages that want to participate in athletic activity. The challenges to the physicians who have to decide whether to approve or deny the participation and the right to compete are great.

The International Olympic Committee (IOC) has recommended, but not mandated, that all countries screen their athletes to minimize the risk of sudden death. According to the IOC, if the twelve lead ECG raises the suspicion of an underlining serious problem in an athlete, further testing should be performed. In many screening programs, the work up also includes an echocardiogram. By contrast, the American Heart Association, (AHA) and the American College of Cardiology (ACC) do not recommend the use of ECG for cardiovascular screening of athletes at any level. The Canadian Heart and Stroke Foundation also has no screening recommendations for athletes nor does the Canadian Academy of Sports and Exercise Medicine.

At the far end of the spectrum is the Italian model, in which individuals are not allowed to participate in minor sports unless they have had a family history taken, physical examination and twelve lead ECG. In the United States and Canada the sports medicine community had not embraced mandatory ECG screening because of concerns about cost, access, and risk of false positives, that leave some healthy kids on the side lines. Instead North American doctors typically rely on information from family history and physical exam to guide decisions.

In this volume the Editors managed to put together a textbook and a reference for physicians and people who have interest in sports medicine. To my knowledge there is no other textbooks such as this. All the issues that involve cardiac activity and sports from arrhythmia and sudden death to mechanical and hemodynamic issues are addressed.

This book is unique, because it is concise, accurate and extremely helpful in making decisions. Both the general practitioner as well as the cardiologist will find this textbook a useful resource and reference when they deal with

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patients with or without cardiac issues, who want to participate in athletic activity. Through the collective efforts of all the Authors and the Editors, they were able to catalog the knowledge of this very important branch of medicine that impacts enormously the quality of life of the general populations, and athletes in particular.

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#### **Foreword**

Earlier this year and within the span of few weeks, two European football players, Fabrice Muamba and Piermario Morosini sustained sudden cardiac arrests, sending shock waves across the athletic and medical communities. These and other similar events over recent years have fueled an increased interest in sports cardiology. This field has been overlooked for years, which resulted in a poor understanding of the prevention and management of cardiac conditions among athletes.

This book, edited by Massimo Fioranelli and Gaetano Frajese, is a comprehensive practical guideline to sports cardiology. The areas covered include all aspects of this field, from history and physical examination to advanced imaging. The chapters are concise and clear, making this book an important tool for practicing cardiologists who will find themselves increasingly faced with situations requiring proficiency in the prevention, diagnosis and treatment of cardiac diseases in athletes.

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#### **Preface**

Physical activity and health are now inseparable terms; regular exercise, like a pharmacological intervention, is a powerful tool of prevention and treatment for many cardiovascular diseases. In addition, the psychophysical well-being that comes from sport drives many individuals, including the elderly, to initiate and continue the practice of many sports.

The athlete's cardiovascular adaptation is sometimes a thin line between physiology and pathology, and often makes it difficult to assess the individual risk.

Whenever an athlete dies on the playing fields, cardiologists are called upon to answer the usual questions: what was the cause of death, and why was not possible to prevent it?

This whole issue revolves around the professional competence of the modern cardiologist and the limitations of current screening procedures.

If this is an objective difficulty, amplified by the media's widespread reporting of just a few fatal accidents, there are also clinical settings with less media attention but which are not free from reflection or from medical and legal implications.

The constant evolution of knowledge in the field of cardiovascular pathophysiology and the stressful pace of the work force the clinical cardiologist and the sports physician to rapidly and continuously update their knowledge.

As with other specializations, and maybe more so, the modern cardiologist has a variety of skills that make it even more important to integrate news with everyday clinical practice; we therefore require tools that can assist doctors in making clinical decisions.

This book is developed for these requirements and is characterized on the one hand by a systematic review of indications for modern non-invasive and invasive diagnosis, and on the other hand on the clinical approach to most cardiovascular problems that affect athletes.

Particular care has been take to cover modern interventional therapies ranging from coronary artery interventions to issues related to closure of the patent foramen ovale, precautions to observe in patients with antiarrhythmic devices, and safety precautions for sporting activity in patients with congenital heart disease.

I hope that this book can help the modern sports physicians in the daily task of solving clinical problems.

Massimo Fioranelli

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