

# The MECKI score initiative: a successful and ongoing story

Massimo F Piepoli<sup>1</sup>, Ugo Corrà<sup>2</sup> and Piergiuseppe Agostoni<sup>3,4</sup>

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The MECKI score adventure started at a Società Italiana di Cardiologia national meeting in December 2006, when a group of six cardiopulmonary exercise test (CPET) lovers, Piergiuseppe Agostoni, Ugo Corrà, Rocco Lagioia, Massimo Piepoli, Marco Guazzi and Gianfranco Sinagra decided to share their expertise on CPET in heart failure (HF) patients. Romualdo Belardinelli served as external reviewer. Within a few months, we were able to share the data of our six laboratories analysing the CPET of 942 reduced ejection fraction patients. In our first report, published in the *European Heart Journal*, the peculiar behaviour of oxygen consumption ( $\text{VO}_2$ ) kinetics in patients with HF and atrial fibrillation was described.<sup>1</sup> It was the beginning of this collaborative story based on friendship, reciprocal trust and the common belief that only working together generates bulks of data big enough to improve our knowledge significantly and possibly help our patients. Of note, the entire dataset and its analysis were based and are still based on purely volunteer work. The following years were dedicated to the involvement of more centres, to the recruitment of more patients and, most importantly, to the building of the patient follow-up that led to the publication in 2013 of the Metabolic Exercise Cardiac Kidney Index, a score built on 2715 low ejection fraction HF patients.<sup>2</sup> Patients were recruited in 13 centres with an average follow up of 2.8 years. The MECKI score calculator is available free of charge on the internet. The MECKI score has shown an excellent performance in risk prediction in HF patients, comparable and even higher than other currently employed models.<sup>3</sup> By the way, MECKI has also been Prof Agostoni's nickname since his birth. Indeed, the German Fraülein taking care of him used to say 'Das ist ein MECKI'; that is, the male of a pork-pine family well known in Bavaria, Austria, and Switzerland, just to underline Prof Agostoni's Swiss origin. The current composition of the MECKI score dataset is now 7004 patients, with an

average follow-up of almost 4 years, recruited in 27 centres in Italy (Figure 1). The centre collecting data is Centro Cardiologico Monzino, IRCCS where, under the supervision of Elisabetta Salvioni, all data are checked for quality and consistency.

What lies in the future? Several things are ongoing in Italy and worldwide. In Italy, keeping the original spirit of friendship, we aim to reach 10,000 patients with CPET and an average follow-up of more than 3 years; thereafter, prognosis in different specific settings of HF patients, such as women with HF, different pharmacological or non-pharmacological treatments, different HF aetiologies, and so on. In the rest of the world, specific MECKI score analyses are ongoing in Europe, with 1000 patients recruited, in China (>300 cases), in Japan (900 cases), as well as in South America and the US. However, the strength of the MECKI score group, besides the friendship among participants and the common willingness to help patients, is to underline the concept that, in chronic HF, the great majority of symptoms are exercise related, and exercise needs to be evaluated to allow the best assessment of patients. The latter is still an unmet need in several parts of the world.

<sup>1</sup>UOC Cardiologia, G da Saliceto Hospital, Italy

<sup>2</sup>Cardiac Rehabilitation Division, IRCCS Istituti Clinici Scientifici Maugeri Spa SB, Italy

<sup>3</sup>Centro Cardiologico Monzino, IRCCS, Italy

<sup>4</sup>Department of Clinical Sciences and Community Health, University of Milano, Italy

#### Corresponding author:

Piergiuseppe Agostoni, Centro Cardiologico Monzino IRCCS, Department of Clinical Sciences and Community Health, Università degli Studi di Milano, Italy.

Email: piergiuseppe.agostoni@cardiologicomonzino.it

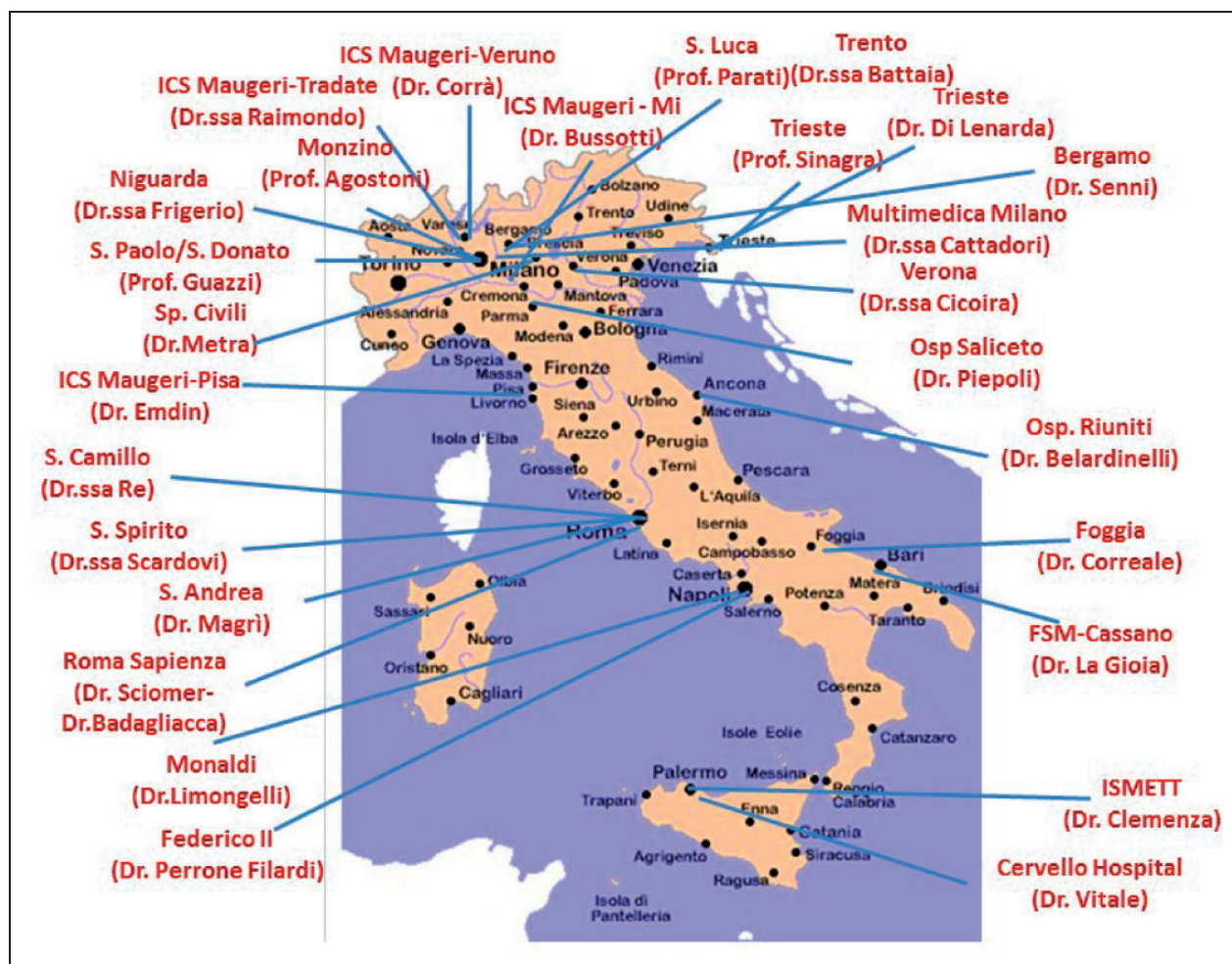


Figure 1. Italian MECKI score centres, 2020.

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