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Transforming heart failure and cardio-oncology care during COVID-19

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Heart failure (HF) is a prevalent and lethal condition in Western societies, with a consistently increasing number of affected patients. High hospitalization rates and low quality of life result in extreme healthcare burden.¹ Recently, the European Society of Cardiology (ESC) published recommendations for developing HF quality centres to improve patient outcomes, while at the same time containing exploding healthcare costs.² Following their example, the Hellenic Heart Failure Association (HHFA) developed a strategy to organize a nationwide HF clinics network.³ In the current edition of the journal, the first evaluation of the infrastructure and functioning of the clinics is being reported. On top of that, this evaluation offers an in-depth assessment of such strategy during the current global COVID-19 pandemic.

The authors conducted two surveys using the questionnaires provided by the ESC network. Evaluation of the infrastructure, expertise, and workload of HF clinics, including cardio-oncology (CO) clinics, was conducted at baseline and within the following 17 months.

One of the first alarming observations pointed out by the authors is a decline in the number of professionals, most importantly residents, involved in HF care. This decline is according to the authors' direct result of the still ongoing economic crisis in Greece. Furthermore, only 26% of cardiologists participating in HF clinics have had specific training in HF care and treatment. It is logical to presume that most of the highly trained HF specialists end up working in advanced HF clinics, leaving a substantial expertise gap between community-based and advanced care HF clinics.

On the other hand, cardiologists working in CO clinics report additional training courses and self-education of up to 92%. This gap in education between HF and CO clinics may be explained by the very recent bloom of CO. HF is a more generic subspecialty in cardiology, and most cardiologists will inevitably care for patients with HF, and basic HF training is part of all cardiology curricula. However, there has been less attention for HF fellowships and traineeships, and as a consequence, the care for HF has remained disperse

and of variable quality. The authors rightfully advocate that in the future, there should be more focus on a specific HF training by recognizing HF and CO as new subspecialties.

The authors also mention other infrastructural weak points in need of major improvements. While standard imaging modalities (e.g. standard echocardiography) significantly improved (75% in 2020 compared to 60% in 2018), only 34% of the clinics use advanced echocardiography techniques recommended by the (European) HFA and (Greek) HHFA.^{2,3} This can be another direct consequence of the previously mentioned expertise gap that this network faces. Furthermore, no significant improvement in other diagnostic and treatment modalities, such as cardiac magnetic resonance (23% in 2020 compared to 27% in 2018), ergo-spirometry (29% in both analyses), electrophysiological studies (55% in 2020 compared to 46% in 2018), and biomarker studies with NT-proBNP (86% in 2020 compared to 85% in 2018), was observed. The availability of cardiac rehabilitation programs (which is a level I recommendation in ESC Heart Failure guidelines!) is remarkably and disappointingly low: around 5% in both analyses.

Although most pertinent diagnostic tools are available, the data do not fully explain why there are still clinics that do not offer them. For instance, NT-proBNP measurements are invaluable and easy to obtain, but apparently, 15% of HF clinics in the network do not use them. Furthermore, only 65% of the clinics enter their findings in a HF database or registry, which goes with the loss of useful clinical data. On another hand, the authors do not offer specific recommendations on how to execute the needed changes. Evaluations of existing networks should ideally not only recognize gaps but also give realistic ideas on how to implement needed improvements. It could, for example, be proposed that reimbursement is restricted if clinics do not meet certain thresholds for evidence-based treatments, or that failure to deliver data results in exclusion from the network.

The evaluation made by Keramida *et al.* offers an additional and unique potential: to identify deficiencies and

advantages in the time of the healthcare crisis due to the COVID-19 pandemic. The pandemic resulted in a worldwide lockdown in a matter of weeks, forcing extreme changes in every aspect of our normal, everyday life, and healthcare systems are no exception. It is very concerning that pandemic mortality rates seem to be related not only directly to COVID-19 infection but also to a lack of healthcare resources.⁴ Indeed, while COVID-19 hospital admissions were uncontrollably rising, hospital admissions for almost every other discipline were abruptly diminishing. Due to the imminent health threat, especially to vulnerable patient groups and healthcare workers, elective procedures and non-emergency care have massively been postponed. While in the time of writing this article the situation seems to be stabilizing in most countries, many researchers predict that the second wave is inevitable.^{5,6} This is why the evaluation of our efforts and results during the COVID-19 pandemic is vital. Specifically, it has been observed that cardiovascular care, which accounts for a substantial proportion of mortality in Western countries, has been downgraded similarly when compared to other, less acute, and not life-threatening care. The number of acute coronary syndromes, myocardial infarction (MI), and primary PCI was reported much lower around the world.^{7–11} It is hard to imagine that the incidence of MI would drop by 50% in a matter of weeks. The logical assumption is that low incidence represents as a direct result of both patient and hospital delay. This is especially concerning when taken into an account that cardiovascular disease and related co-morbidities have been reported to significantly influence COVID-19 mortality rates.^{12–14}

The data for HF admissions are less straightforward. Several countries reported a severe decline in acute HF admissions, and those who presented had worse symptoms at the time of the admission when compared to the previous years.^{15–17} Kermida *et al.* confirmed the dramatic consequences for HF care caused by COVID-19 and also observed a severe reduction in patient contacts. Only 18% of HF and 77% of CO clinics continued their practices. Unfortunately, the authors do not provide more data on HF admissions or the functional status of their patients. However, the majority of the HF clinics interviewed (69%) did perceive a drop in HF hospitalizations. The authors do offer more data on the functioning of CO clinics. The cutback in patient care directly led to 30% of the patients starting their oncological treatment

without CO assessment. Furthermore, CO surveillance was continued only for high-risk patients, which accounts for 15% of the total CO patient population. This difference in functioning between general HF and CO clinics could partially be explained by the lower number of CO clinics and therefore a lower total number of patients. It could also mean that cancer treatments have been discontinued less often when compared to HF treatments. In addition, one could argue that the need for active antineoplastic treatment requires more frequent visits and follow-up than the treatment of patients with chronic HF. However, such presumptions cannot explain the colossal drop of other cardiac emergencies, such as MI and acute HF. For HF, this is all the more intriguing, as patients with chronic HF are generally made familiar with early signs and symptoms of acute exacerbation due to frequent education and counselling, and are supposedly more prone to react to small changes in their cardiorespiratory status. At the same time, presumably, new patients have ignored their early signs and symptoms of cardiac distress during the COVID-19 era.

The authors offer several possibilities on how we could manage HF and CO patients during a second COVID-19 wave. They identify telemedicine as an essential step in improving patient care in the time of the pandemic. Virtual consultations protect patients, healthcare professionals, and community from overexposure while offering constant 24/7 service.¹⁸ However, this change may take time and effort, as an increase of only 7% was observed by the authors. This seems inadequate to bring significant improvements to COVID-affected health care. The biggest challenge is, however, making telemedicine accessible to everyone, especially in developing countries.

Evaluations like this one are of both scientific and clinical value. Only by recognizing and improving on our weakest points are we ready to face future crises. We urge clinicians to continue strict treatment and follow-up of all patients with heart disease because even in crisis, the heart must continue to beat.

Conflict of interest

None declared.

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