

Mechanical Circulatory Support in End-Stage Heart Failure

A Practical Manual

Andrea Montalto
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 Springer

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In collaboration with Cristiano Amarelli

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To all patients whose desire for a better life inspired me

Andrea Montalto

To my beloved daughter, Alessandra, and wife, Elisa

Antonio Loforte

*To my relatives and friends
who cared and loved me, supporting my curiosity and perseverance after the loss
of my father*

Cristiano Amarelli

Preface

» *We are all God's knights and knights of life.
This is my destiny, this is the message that God tells me to bring.
A message of life and hope for me and for others.
Whatever happens do not close my sufferings in a drawer or a sad thought.
I was always smiling. Remember my smile and my will to live.
Go ahead and tell it so that it can be of relief and hope for others.
It should be a happy memory.
So in the worst case a knight will become an angel.
Mario C.*

End-stage acute and chronic heart failure refractory to maximal pharmacological therapy carries a poor chance of survival for patients unless they undergo heart transplantation. Heart transplantation is restricted by age and comorbidities to a small group of patients, and the actual donor's shortage does not meet properly the demand of patients on waiting list. Mechanical circulatory support is a valid temporary solution before heart transplantation, whose results are playing the role of a game-changer in such a challenging field. The choice and management of the right device for every patient remains tricky. Giving the equipoise of the short and even the midterm results between LVADs and heart transplantation experienced in the last decade, the use as destination therapy is gaining space, permitting to promptly treat a wider patient population. Prompt availability and cost-effectiveness as unique constraint are the mainstreams of the mechanical solution. The proper selection of candidates for VAD or TAH implantation remains a challenging clinical decision. Patients who are too compromised may

have an elevated risk of mortality post-operatively while patients with an early heart dysfunction scenario may have a poor benefit, thus being more exposed to device-related complications. Preoperative hemodynamic and clinical scenarios which may occur are extremely different from those the clinicians routinely have to face up to with traditional cardiac surgery therapy. Proper management and interpretation of MCS-related complications is an additional concern to deal with particularly in the case of non-hub and well-trained centers. Moreover, the psychological aspects and views of long-term VAD/TAH recipients which may influence the overall outcome should not be underestimated.

The complexity of MCS therapy and its clinical landscape, as well as the devotion of free minds in discovering, always case by case, the adequate treatment of such a delicate patient population, stimulated all of us to develop such an ambitious project. We aimed at building a textbook that would be a practical guide in terms of correct and well-accepted management of patients undergoing implantation of VAD and TAH. Our goal was to move up from a pioneer's phase of MCS adopted in few centers in the world to a world-wide standardized and shared management of a such effective therapy. In order to accomplish all of the above, we approached all those renowned centers and physicians worldwide who, over the years, have spent interest and time mostly in studying deeply such a delicate medicine field which is heart failure mechanical treatment. We encouraged all authors to enrich their contributions with tables and algorithms in order to render each chapters adoptable as a guiding protocol, thus providing keys for the resolution of any kind of traditionally discussed issue. Our goal has been

welcomed with great enthusiasm by all authors who have fully grasped the essence of this project. It is therefore with great satisfaction that we thank all those who, despite the onerous work commitments,

have devoted their time to the realization of this book which we hope will be a valuable tool to improve survival and quality of life of those people who are living thanks to an artificial heart support system.

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