BioMed Research International

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Special Issue on

Alternatives to Transplantation in the Treatment of Heart Failure: New Diagnostic and Therapeutic Insights

CALL FOR PAPERS

Cardiovascular disease is the leading cause of mortality in the USA and Western countries with ischemic heart disease accounting for the majority of these deaths. Paradoxically, the improvements in the medical and surgical treatment of acute coronary syndromes are leading to an increasing number of "survivors" who are then developing heart failure. Despite the considerable advances in the management of heart failure, the gold standard for the treatment of end-stage heart failure patients remains heart transplantation. Nevertheless, this procedure can be offered only to a small percentage of patients who could benefit from a new heart, due to the limited availability of donor organs. In fact, the number of heart transplants has remained static worldwide and the number of heart transplants performed each year in the United States has plateaued at about 2100 for the past few years. Improving awareness of the very end stages of heart failure is emerging as a major need for the clinical community, and implementing best practices for alternative care is also growing.

A number of innovative approaches are being investigated in terms of improved survival and quality of life in patient's refractory to medical therapy and excluded from cardiac transplantation lists. These procedures include the optimization of medical therapy, coronary artery bypass surgery, and valve surgery in high risk patients, ventricular restoration techniques, and the implantation of ventricular assist devices as destination therapy or other approaches (such as cardiac resynchronization therapy). Future therapies for heart failure could include new approaches with stem cell therapy, associated with standard revascularization techniques or with other procedures such as the implantation of innovative ventricular assist devices, new ventricular restoration techniques, or new drugs.

Of interest, a significant proportion of patients present with an idiopathic cardiomyopathy; it is now recognized that many of these cases may be due to inherited mutations, mainly in genes coding for sarcomeric proteins. As gene therapy is still in its infancy, more sensitive and specific markers are required for the early detection and monitoring of heart failure development in the clinical setting. The continuous innovations in proteomic technologies will help pinpoint protein posttranslational modifications that could underlie the transition to heart failure. This link between biology and technology could greatly assist in identifying biomarkers with increased specificity as well as more effective therapies.

With an expanding "toolbox" of comprehensive basic, medical, surgical, and technological approaches, it is expected that these novel findings will soon be translated to the clinical practice. In fact, new therapeutic strategies are desperately needed by the millions of patients suffering from heart failure.

We invite investigators to contribute original research articles as well as review articles regarding new approaches and future trends in the management of heart failure.

Potential topics include, but are not limited to:

- Genomic, proteomics, and metabolomics of heart failure
- New biomarkers for early diagnosis and follow-up
- Clinical experiences on new drugs for the medical therapy
- New surgical alternatives to transplantation
- New systems or new materials available for future cardiac assist devices
- Stem cell therapy

Authors can submit their manuscripts via the Manuscript Tracking System at http://mts.hindawi.com/submit/journals/bmri/cardiology/tran/.

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