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## Translational research and innovation in modern transplant practice: Paradigms from Greece and around the world

Georgios Tsoulfas, Ioannis Boletis, Vassilios Papalois

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### Abstract

The continuous clinical and technological advances, together with the social, health and economic challenges that the global population faces, have created an environment where the evolution of the field of transplantation is essentially necessary. The goal of this special issue is to provide a picture of the current status of transplantation in Greece as well as in many other countries in Europe and around the world. Authors from Greece and several other countries provide us with valuable insight into their respective areas of transplant expertise, with a main focus on the field of translational research and innovation. The papers that are part of this Special Issue "Translational Research and Innovation and the current status of Transplantation in Greece" have presented innovative and meaningful approaches in modern transplant research and practice. They provide us with a clear overview of the current landscape in transplantation, including liver transplantation in the context of a major pandemic, the evolution of living donor kidney transplantation or the evolution of the effect of hepatitis C virus infection in transplantation, while at the same time explore more recent challenges, such as the issue of frailty in the transplant candidate and the changes brought by newer treatments, such as immunotherapy, in transplant oncology. Additionally, they offer us a glimpse of the effect that technological innovations, such as virtual reality, can have on transplantation, both in terms of clinical and educational aspects. Just as critical is the fact that this Special Issue emphasizes the multidisciplinary, collaborative efforts currently taking place that link transplant research and innovation with other cutting-edge disciplines such as bioengineering, advanced information technology and artificial intelligence. In this Special Issue, in addition to the clinical and research evolution of the field of



transplantation, we are witnessing the importance of interdisciplinary collaboration in medicine.

**Key Words:** Translational research; Non-alcoholic fatty liver disease; Immunotherapy; Pandemic; Liver transplantation; Bioengineering; Artificial intelligence; Immunosuppression; Transplant oncology; Living donor kidney transplantation

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**Core Tip:** The goal of this special issue is to provide a picture of the current status of transplantation in Greece as well as in many other countries in Europe and around the world. The issue will focus on presenting innovative and meaningful approaches in modern transplant research and practice as well as to emphasize the multidisciplinary, collaborative efforts currently taking place that link transplant research and innovation with other cutting-edge disciplines such as bioengineering, advanced information technology and artificial intelligence.

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## INTRODUCTION

Transplantation represents to all of us the “Field of Dreams”. The reason is that this multidisciplinary vocation of modern medical practice combines the opportunity to significantly improve and, in most cases, save human lives, with adrenaline-filled surgical procedures, together with a constant need for innovation and improvement in a variety of areas including nephrology, hepatology, endocrinology, immunology, pharmacology, anesthesia, radiology and surgery. Most importantly, it is an area where most of the biggest questions have yet to be answered, such as those of achieving tolerance and avoiding immunosuppression. All of the above, make the field of transplantation an actively evolving science on many different levels, where every step forward counts, since human lives are at stake.

The goal of this special issue is to provide a picture of the current status of transplantation in Greece as well as in many other countries in Europe and around the world. The issue will focus on presenting innovative and meaningful approaches in modern transplant research and practice as well as to emphasize the multidisciplinary, collaborative efforts currently taking place that link transplant research and innovation with other cutting-edge disciplines such as bioengineering, advanced information technology and artificial intelligence. Furthermore, we wish to demonstrate that a negative national and international financial climate and the massive effect of the coronavirus disease 2019 pandemic, do not stop the advancement of the field of transplantation and, on certain occasions, they can be the drive for it.

The authors participating in this special issue provide us with a clear overview of the current landscape in transplantation, including liver transplantation in the context of a major pandemic, the evolution of living donor kidney transplantation or the evolution of the effect of hepatitis C virus infection in transplantation, while at the same time explore more recent challenges, such as the issue of frailty in the transplant candidate and the changes brought by newer treatments, such as immunotherapy, in transplant oncology[1]. Additionally, they offer us a glimpse of the effect that technological innovations, such as virtual reality, can have on transplantation, both in terms of clinical and educational aspects.

Most importantly, the papers in this special issue stress the need for interdisciplinary and international collaboration in the field of transplantation and the fact that it remains our “Field of Dreams”. Yesterday’s dream is today’s aspirational research and tomorrow’s established practice.

## CONCLUSION

The papers in this Special Issue[2-12] are evidence that global economic and health challenges cannot and should not stop the ongoing evolution of a scientific field as active and as necessary as transplantation.

## FOOTNOTES

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