Human Assisted Reproductive Technology

Future Trends in Laboratory and Clinical Practice
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More information
To Bob Edwards for his insight and wisdom, and for his support of a great many scientists and clinicians from the very beginnings of human IVF.
A true pioneer and gentleman.
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Preface

Approximately 1% of all children born in the developed world are now conceived through in vitro fertilization (IVF). Since the birth of Louise Brown in 1978, there has been a growing list of new technologies developed for assisted conception, such as intracytoplasmic sperm injection and embryo biopsy, with an estimated four million IVF children born world-wide. Assisted Reproductive Technologies (ART) represent an increasingly important means of infertility treatment. It is, therefore, fitting that in 2010 the Nobel Prize for Physiology or Medicine was awarded to Professor Robert Edwards for the development of human IVF. This Prize not only acknowledges the phenomenal dedication and contribution of our friend and colleague Bob Edwards, but also reflects the significance in which Reproductive Medicine is now held.

The twenty-first century has been witness to further remarkable developments in the field of ART. Developments in patient management and stimulation continue to be important determinants in the outcome of ART. Optimizing the patient for a successful IVF cycle sometimes requires surgical intervention. Modern surgery often implies the use of sophisticated technology such as computer-enhanced or robotic surgery.

In the embryo laboratory there has been the introduction of the “OMIC” technologies, more advanced culture procedures for follicles, gametes, and embryos, along with exciting developments in microfluidic culture and analysis. These are genuinely exciting times, and the clinical developments and new research described in this volume will become a part of the main fabric of human IVF procedures in the years to come. Ultimately, such improvements will greatly assist in the move towards single embryo transfer for the majority of patients seeking infertility treatment. The days of multiple gestations should soon be confined to the annals of human infertility treatment.
Acknowledgments

Given the breadth of expertise required to perform optimized IVF, we approached leaders in both the medical and scientific community to share their insight into what our field will look like in the near future. We are most grateful for their generosity of time and intellect to make this book a reality. In such a volume it is not possible to cover all new developments and so we consider this edition as one of several possible windows into the future. We would also like to thank Nick Dunton, Nisha Doshi and Jo Endell-Cooper at Cambridge University Press for their professionalism and commitment to this project.