Pregnancy After Assisted Reproductive Technology

Pregnancy After Assisted Reproductive Technology

Edited by

Eric R. M. Jauniaux

Professor of Obstetrics and Fetal Medicine at the UCL EGA Institute for Women's Health, University College London, London, UK

Botros R. M. B. Rizk

Professor of Obstetrics and Gynecology and Director of the Division of Reproductive Endocrinology and Infertility, University of South Alabama College of Medicine, Mobile, AL, USA



CAMBRIDGE UNIVERSITY PRESS Cambridge, New York, Melbourne, Madrid, Cape Town, Singapore, São Paulo, Delhi, Tokyo, Mexico City

Cambridge University Press The Edinburgh Building, Cambridge CB2 8RU, UK

Published in the United States of America by Cambridge University Press, New York

www.cambridge.org Information on this title: www.cambridge.org/9781107006478

© Cambridge University Press 2012

This publication is in copyright. Subject to statutory exception and to the provisions of relevant collective licensing agreements, no reproduction of any part may take place without the written permission of Cambridge University Press.

First published 2012

Printed in the United Kingdom at the University Press, Cambridge

A catalogue record for this publication is available from the British Library

Library of Congress Cataloguing in Publication data Pregnancy after assisted reproductive technology / edited by Eric R.M. Jauniaux, Botros R.M.B. Rizk. p. ; cm. Includes bibliographical references and index. ISBN 978-1-107-00647-8 (hardback) I. Jauniaux, E. II. Rizk, Botros. [DNLM: 1. Reproductive Techniques, Assisted. 2. Infertility. 3. Pregnancy Complications. WQ 208] 616.6'92-dc23

2012013395

ISBN 978-1-107-00647-8 Hardback

Cambridge University Press has no responsibility for the persistence or accuracy of URLs for external or third-party internet websites referred to in this publication, and does not guarantee that any content on such websites is, or will remain, accurate or appropriate.

Every effort has been made in preparing this book to provide accurate and up-to-date information which is in accord with accepted standards and practice at the time of publication. Although case histories are drawn from actual cases, every effort has been made to disguise the identities of the individuals involved. Nevertheless, the authors, editors and publishers can make no warranties that the information contained herein is totally free from error, not least because clinical standards are constantly changing through research and regulation. The authors, editors and publishers therefore disclaim all liability for direct or consequential damages resulting from the use of material contained in this book. Readers are strongly advised to pay careful attention to information provided by the manufacturer of any drugs or equipment that they plan to use.

Thank you to our families for their constant support during the production of this book.

Contents

Contributors page viii

- 1 Introduction 1 Eric R. M. Jauniaux and Botros R. M. B. Rizk
- Assisted reproductive technology pregnancies: the historical perspective 4
 Basil C. Tarlatzis, Dimitra S. Kyrou, and Eric R. M. Jauniaux
- The role of ultrasound in early pregnancy after assisted conception 14 Andrea Day and Davor Jurkovic
- 4 Pregnancy after ovarian hyperstimulation syndrome 36
 Botros R. M. B. Rizk and Raphael Ron-El
- 5 **Early pregnancy failure after assisted reproductive technology** 51 Sotirios H. Saravelos and Lesley Regan
- 6 Singleton pregnancy after assisted reproductive technology: the obstetric perspective 66 Annika K. Ludwig, Michael Ludwig, and Eric R. M. Jauniaux
- 7 Early and late pregnancy and psychological complications after assisted reproductive technology 72
 Gamal I. Serour
- 8 Multiple gestation pregnancy after assisted reproductive technology 82 Eric R. M. Jauniaux

- 9 Pregnancy after intracytoplasmic spermatozoon injection 93
 Willem Verpoest and Paul Devroey
- Pregnancy outcome after oocyte and embryo cryopreservation 108
 Eleonora Porcu and Antonia Bazzocchi
- 11 **Pregnancy after fertility preservation** 124 Ephia Yasmin and Melanie C. Davies
- 12 **Pregnancy after ovarian transplantation** 137 Sherman J. Silber
- 13 Prenatal diagnosis after assisted reproductive technology 149Ido Ben-Ami and Ron Maymon
- 14 Children born after assisted reproductive technology 168Alastair G. Sutcliffe and Tajinder Singhrao
- 15 Ethical and legal perspectives of assisted reproductive technology pregnancies 182
 Françoise Shenfield

Index 193

The color plates can be found between pages 118 and 119.

Contributors

Antonia Bazzocchi

Infertility and IVF Center, University Hospital S. Orsola-Malpighi, University of Bologna, Bologna, Italy

Ido Ben-Ami

Department of Obstetrics and Gynecology, Assaf Harofeh Medical Center, Zerifin, Israel

Melanie C. Davies

Reproductive Medicine Unit, University College London Hospital, London, UK

Andrea Day

Gynaecology Diagnostic and Outpatient Treatment Unit, University College Hospital, London, UK

Paul Devroey

Department of Gynaecology and Reproductive Medicine, Universitair Ziekenhuis Brussel, Brussels, Belgium

Eric R. M. Jauniaux

Institute for Women's Health, Royal Free and University College London Medical School, London, UK

Davor Jurkovic

Gynaecology Diagnostic and Outpatient Treatment Unit, University College Hospital, London, UK

Dimitra S. Kyrou

Department of Obstetrics and Gynecology, Medical School, Aristotle University of Thessaloniki, Thessaloniki, Greece

Annika K. Ludwig Amedes Group Hamburg, Hamburg, Germany

Michael Ludwig Amedes Group Hamburg, Hamburg, Germany

Ron Maymon

Department of Obstetrics and Gynecology, Assaf Harofeh Medical Center, Zerifin, Israel

Eleonora Porcu

Infertility and IVF Center, University Hospital S. Orsola-Malpighi, University of Bologna, Bologna, Italy

Lesley Regan

Department of Obstetrics and Gynaecology, Imperial College London, St Mary's Campus, London, UK

Botros R. M. B. Rizk

Division of Reproductive Endocrinology and Infertility, University of South Alabama College of Medicine, Mobile, AL, USA

Raphael Ron-El

Infertility and IVF Unit, Assaf Harofeh Medical Center, Tel Aviv University, Tel Aviv, Israel

Sotirios H. Saravelos

Department of Obstetrics and Gynaecology, Imperial College London, St Mary's Campus, London, UK

Gamal I. Serour

Al Azhar University, The Egyptian IVF and ET Center, Maadi, Cairo, Egypt

Françoise Shenfield

Institute for Women's Health, Royal Free and University College London Medical School, London, UK

Sherman J. Silber

Infertility Center of St. Louis, St. Luke's Hospital, St. Louis, MO, USA and Academic Medical Center for Reproductive Medicine, Amsterdam, the Netherlands

Tajinder Singhrao

Institute of Child Health, University College London, London, UK

Contributors

Alastair G. Sutcliffe

Institute of Child Health, University College London, London, UK

Basil C. Tarlatzis

Department of Obstetrics and Gynecology, Medical School, Aristotle University of Thessaloniki, Thessaloniki, Greece

Willem Verpoest

Centre for Reproductive Medicine, Universitair Ziekenhuis Brussel, Brussels, Belgium

Ephia Yasmin

Reproductive Medicine Unit, University College London Hospital, London, UK