

Contents

List of contributors	xiii
Abbreviations	xxi

Part I Aetiology

1 Epidemiology of sporadic ovarian cancer <i>Daniel W. Cramer</i>	3
2 Associations between infertility, its treatment, and ovarian cancer risk <i>Ingemar Persson</i>	9
3 The molecular basis of sporadic ovarian cancer <i>Angeles Alvarez and Andrew Berchuck</i>	15
4 Overview of the aetiology of familial ovarian cancer <i>Ronald P. Zweemer</i>	29
5 The prevalence of mutations in <i>BRCA1</i> and <i>BRCA2</i> <i>Michael R. Stratton</i>	37
6 The penetrance of <i>BRCA1/2</i> mutations <i>Jeffery P. Struewing</i>	41
7 Founder mutations of <i>BRCA1/2</i> <i>Uziel Beller, Baruch Modan, Ofer Lavie, Bella Kaufman, Galit Hirsh-Yechzkel, Orit Gotfeld, Angela Chetrit, Raphael Catane, and Ephrat Levy-Lahad</i>	45
8 Clinical implications of genetic testing <i>Andrew Berchuck, P. Andrew Futreal, and Joellen S. Schildkraut</i>	49

Part 2 Natural history and pathology

9 Pathology of epithelial ovarian cancer <i>Harold Fox and Naveena Singh</i>	57
10 Pathology of borderline ovarian malignancy <i>Harold Fox</i>	67
11 Primary non-epithelial ovarian cancers <i>Naveena Singh and David Lowe</i>	75
12 Metastases in the ovary <i>Naveena Singh and David Lowe</i>	85
13 Genetic analysis of putative precursors of ovarian cancer <i>Ian G. Campbell, Sarah J. Morland, Koshiro Obata, Phillippa J. Neville, and Nicola Thomas</i>	91

- 14 Molecular pathogenesis of borderline and
invasive ovarian tumours 97
*Samuel C. Mok, Karen H. Lu, Shu-wing Ng, Gary
K. Tiu, William R. Welch, Debra A. Bell, and
Ross S. Berkowitz*

Part 3 Tumour biology

- 15 The application of novel technology to the study of
ovarian cancer 107
*Monica R. Brown, Michael Emmert-Buck, David B.
Krizman, Emmanuel Petricoin, Lance A. Liotta,
and Elise C. Kohn*
- 16 The biology of the ovarian surface epithelium 113
Rudi Bao, Abbas Abdollahi, and Thomas C. Hamilton
- 17 The tumour microenvironment of epithelial ovarian
cancer 119
*Frances Burke, Chris Scotton, Kate Scott, Robert Moore,
Caroline Arnott, and Fran Balkwill*
- 18 *ARHI* (*NOEY2*), a novel imprinted tumor suppressor
gene in ovarian cancer 125
*Yinhua Yu, Fengji Xu, Hongqi Peng, Xianjun Fang,
Shulei Zhao, Weiya Xia, Wen-lin Kuo, Joe W. Gray,
Michael Siciliano, David Hogg, Andrew Berchuck,
Kelly Hunt, Gordon B. Mills, and Robert C. Bast, Jr*
- 19 Regulation of angiogenesis in ovarian cancer:
role of p53, vascular endothelial growth factor,
and hypoxia 131
E. Ferreux, C.E. Lewis, C.W. Perrett, and M. Wells
- 20 Role of Fas/FasL in the control of human ovary
cancer growth and progression 137
*Delia Mezzanzanica, Alessandra Mazzoni,
Donatella R.M. Negri, Mariangela Figini, Maria I.
Colnaghi, and Silvana Canevari*

Part 4 Prevention and screening

- 21 The surgical prevention of ovarian cancer 145
David H. Oram
- 22 Chemoprevention of ovarian cancer 153
*Christine E. Szarka, Thomas C. Hamilton,
Andres J.P. Klein-Szanto, and Robert F. Ozols*
- 23 Biologic effect of progestins on ovarian epithelium:
cancer prevention through apoptosis? 161
*Gustavo C. Rodriguez, David Walmer, Mark Cline,
Hannah Krigman, Regina Whitaker, Pamela D. Isner,
Bruce Lessey, Connette McMahon, Jeffrey Marks,*

- James Petite, Donna Carver, Kenneth Anderson,
Andrew Berchuck, John Barnes, and Claude Hughes*
- 24 The current status of screening for ovarian cancer 171
Usha Menon and Ian J. Jacobs
- 25 Optimizing the use of ultrasonography in ovarian
cancer screening 179
Paul DePriest
- 26 Doppler ultrasound derived indices in screening and
diagnosis of ovarian cancer 183
Kenneth J.W. Taylor and Andrea Lundell
- 27 Differentiating the risk of ovarian cancer calculation
from CA125 velocity: a new concept for optimizing
CA125 screening for ovarian cancer 189
Steven J. Skates
- 28 Socio-economics of ovarian cancer screening 199
*Nicole Urban, Martin McIntosh, Lauren Clarke,
Ian Jacobs, Beth Karlan, Garnet Anderson, and Charles
Drescher*
- 29 The management of familial ovarian cancer 209
Paul D. Pharoah and James Mackay

Part 5 Diagnostic and prognostic techniques

- 30 Clinical diagnosis including paraneoplastic
syndromes 221
Chris N. Hudson, Thomas J. Ind, and O. Marigold Curling
- 31 Serum tumour markers in the clinical management
of ovarian cancer 233
Robert P. Woolas
- 32 Three-dimensional ultrasound and color-flow studies 243
A. Kurjak and S. Kupesic
- 33 CT and MRI of ovarian cancer 257
S.A.A. Sohaib and R.H. Reznek
- 34 Radionuclide imaging 269
*Keith E. Britton, Faria Nasreen, Hikmat Jan, and Marie
Granowska*
- 35 Telomerase in ovarian cancer: a possible diagnostic
tool and therapeutic target? 275
*G. Bea A. Wisman, Marco N. Helder, Steven de Jong,
Elisabeth G.E. de Vries, and Ate G.J. van der Zee*
- 36 Detection of circulating tumor cells in the peripheral
blood and bone marrow of patients with ovarian
cancer 281
*Christian Marth, Hanne Høifødt, Lise Walberg,
Janne Kern, Ole Mathiesen, Marianne Andresen,
Claes Tropé, and Øystein Fodstad*

Part 6 Surgical treatment and organization of care

- 37 Overview of primary surgery for ovarian cancer 289
Thomas E.J. Ind and John H. Shepherd
- 38 Interval debulking surgery significantly increases the survival and progression-free survival in advanced epithelial ovarian cancer patients: an EORTC Gynaecological Cancer Co-operative Group study 299
Maria E.L. van der Burg, Mat van Lent, Anna Kobierska, M.R. Pittelli, Guiceppe Favalli, Angel J. Lacave, M. Nardi, Guido Hocht Boes, Ivana Teodorovic, and Sergio Pecorelli
- 39 The role of surgery in relapse and palliation of ovarian cancer 305
Sean Kehoe and Christopher Mann
- 40 The role of minimal access surgery in ovarian cancer 311
Robin A.F. Crawford
- 41 The organization of care 319
H.C. Kitchener
- 42 Patterns of care in ovarian cancer 323
Edward L. Trimble

Part 7 Adjuvant and palliative therapy for ovarian cancer

- 43 Current chemotherapy options in ovarian cancer 333
Martin Gore, Francisco Sapunar, and David Gibbs
- 44 Chemotherapy for epithelial cancer of the ovary 341
Jonathan Shamash and Maurice Slevin
- 45 Neoadjuvant chemotherapy in advanced ovarian carcinoma: present and future prospects 351
Ignace Vergote
- 46 Randomized trials in epithelial ovarian cancer: the Gynecologic Oncology Group studies 355
Jonathan S. Berek and Robert F. Ozols

Part 8 Novel therapies: the future

- 47 Angiogenesis in epithelial ovarian cancer: an important biologic event and therapeutic target 363
Elise C. Kohn
- 48 Delivery of genes to ovarian cancer using targeted vectors based on self-assembling polymers 371
Kerry D. Fisher, Christopher M. Ward, Nigel Acheson, and Leonard W. Seymour
- 49 Corporate drug discovery strategies 377
Mark P. Smith and George R. P. Blackledge

- 50 DNA mismatch repair and drug resistance 379
Stephen B. Howell, Xinjian Lin, and Heung-Ki Kim
- 51 Gene therapy and immunomodulation 385
Rosalind Graham, Michael Smith, Lukas Heukamp, Izsabel Correa, Tim Plunkett, Moira Shearer, David Miles, Joy Burchell, and Joyce Taylor-Papadimitriou
- 52 Preclinical and phase I clinical studies of combinations of chemotherapy with recombinant adenovirus containing full-length, human p53 tumor suppressor gene cDNA for p53-mutant ovarian cancer 391
M.D. Pegram, G. Konecny, R. Buller, I. Runnebaum, D.J. Slamon, L.L. Nielsen, J. Horowitz, and B.Y. Karlan
- 53 Paclitaxel resistance in human ovarian cancer: role of apoptosis-related proteins 399
Stephen R.D. Johnston, Mansour S. Al-Moundhri, Lloyd R. Kelland, and Martin E. Gore

- 54 Trials of *p53* gene therapy: rationale and preliminary studies 407
R.E. Buller, M. Pegram, I. Runnebaum, JoAnn Horowitz, T.E. Buekers, Thomas P. Salko, M.E. Rybak, M.S. Shahin, R. Kreienberg, B. Karlan, and D. Slamon
- 55 Phosphatidylinositol 3'-kinase as a target in ovarian cancer: from genomics to therapeutics 413
Yiling Lu, Laleh Shayestri, Ruth Lapushin, Singxing Yu, Bruce Cuevas, Xianjun Fang, Astrid Eder, Tatsuro Furui, Daniel Plikoff, Wen-Lin Kuo, Russ Baldocchi, Bart Vanhaesebroeck, Robert C. Bast, Dan Pinkel, Kathy Siminovitch, Robert Jaffe, Joe Gray, and Gordon B. Mills
- Index 423