

Cancer and Genetics: Part I

Prepared by Martha Weinar, MS, RN, Kathleen Calzone, RN, MSN, APNG,
and Bridget LeGrazie, MSN, RN, AOCN®, APN, C

This is the first in a series of bibliographies introducing readers to the role of genetics in cancer. These articles represent a variety of resources covering various related topics. Certain themes are more specific to hereditary cancer, whereas others address sporadic cancer. These articles are intended to serve as a vehicle from which readers can research other references.

Included in Part I are the following topics.

- Cultural aspects of cancer genetics, with an emphasis on Native Americans, African Americans, Hawaiians, Japanese, and Ashkenazi Jews
- Legal and ethical issues in cancer genetics, focusing on essential competencies of nurses, discrimination, informed

consent, and indications for genetic assessment and testing

- Pharmacogenetics and cancer, concentrating on current and future applications of research being conducted in this field
- Psychological aspects of genetics in cancer limited to inherited susceptibility to cancer, including hereditary breast or ovarian cancer, hereditary nonpolyposis colon cancer, and multiple endocrine neoplasia

This collection of articles represents current clinical research and nursing research. Some references have been included as learning tools and focus on a particular subject. Others are review articles, which provide the reader with a more comprehensive view of a topic.

Cultural Aspects of Cancer Genetics

- Baty, B.J., Kinney, A.Y., & Ellis, S.M. (2003). Developing culturally sensitive cancer genetics communication aids for African Americans. *American Journal of Medical Genetics*, 118A, 146–155.
- Burhansstipanov, L., Bemis, L.T., & Dignan, M.B. (2001). Native American cancer education: Genetic and cultural issues. *Journal of Cancer Education*, 16, 142–145.
- Glanz, K., Grove, J., Lerman, C., Gotay, C., & Le Marchand, L. (1999). Correlates of intentions to obtain genetic counseling and colorectal cancer gene testing among at-risk relatives from three ethnic groups. *Cancer Epidemiology, Biomarkers and Prevention*, 8, 329–336.
- Lehmann, L.S., Weeks, J.C., Klar, N., & Garber, J.E. (2002). A population-based study of Ashkenazi Jewish women's attitude toward genetic discrimination and BRCA1/2 testing. *Genetics Medicine*, 4, 346–352.
- Lerman, C., Hughes, C., Benkendorf, J.L., Biesecker, B., Kerner, J., Willison, J., et al. (1999). Racial differences in testing motivation and psychological distress following pretest education for BRCA1 gene testing. *Cancer Epidemiology, Biomarkers and Prevention*, 8, 361–367.
- Lewis, L.J. (2002). Models of genetic counseling and their effects on multicultural genetic counseling. *Journal of Genetic Counselors*, 11, 193–212.

- Meiser, B., Eisenbruch, M., Barlow-Stewart, K., Tucker, K., Steel, Z., & Goldstein, D. (2001). Cultural aspects of cancer genetics: Setting a research agenda. *Journal of Medical Genetics*, 38, 425–429.
- Olopade, O.I., Fackenthal, J.D., Dunston, G., Tainsky, M.A., Collins, F., & Whitfeld-Broome, C. (2003). Breast cancer genetics in African Americans. *Cancer*, 97(1 Suppl.), 236–245.
- Schwartz, M.D., Benkendorf, J., Lerman, C., Isaac, C., Ryan-Robertson, A., & Johnson, L. (2001). Impact of educational print materials on knowledge, attitudes, and interest in BRCA1/2: Testing among Ashkenazi Jewish women. *Cancer*, 92, 932–940.

Legal and Ethical Issues in Cancer Genetics

- American Society of Clinical Oncology. (2003). American Society of Clinical Oncology policy statement update: Genetic testing for cancer susceptibility. *Journal of Clinical Oncology*, 21(12), 2397–2406.
- Burke, W., Pinsky, L.E., & Press, N.A. (2001). Categorizing genetic tests to identify their ethical, legal, and social implications. *American Journal of Medical Genetics*, 106, 233–240.
- Calzone, K., Jenkins, J., & Masny, A. (2002). Core competencies in cancer genetics for advanced

practice nurses. *Oncology Nursing Forum*, 29, 1327–1333.

- Cassells, J.M., Jenkins, J., Lea, D.H., Calzone, K., & Johnson, E. (2003). An ethical assessment framework for addressing global genetic issues in clinical practice. *Oncology Nursing Forum*, 30, 383–390.
- Frank-Stromborg, M., & Ganschow, J.R. (2002). Legal issues in the early detection and monitoring of cancer. *Seminars in Oncology Nursing*, 18, 128–134.
- Geller, G., Botkin, J., Green, M., Press, N., Biesecker, B., Wilfond, B., et al. (1997). Genetic testing for susceptibility to adult-onset cancer: The process and content of informed consent. *JAMA*, 277, 1467–1474.

Martha Weinar, MS, RN, is a nurse coordinator for the Risk Evaluation Program in Abraham Cancer Center at the University of Pennsylvania in Philadelphia; Kathleen Calzone, RN, MSN, APNG, is a nurse specialist in research for the National Cancer Institute Center for Cancer Research Genetics Branch at the National Naval Center in Bethesda, MD; and Bridget LeGrazie, MSN, RN, AOCN®, APN, C, is manager of the Family Risk Assessment Program at Fox Chase Virtua Health Cancer Program in Mount Holly, NJ.

Digital Object Identifier: 10.1188/03.ONF.921-922

- Hall, M.A., & Rich, S.S. (1999). Laws restricting health insurers' use of genetic information: Impact on genetic discrimination. *American Journal of Human Genetics*, 66, 293–307.
- Hall, M.A., & Rich, S.S. (2000). Patients' fear of genetic discrimination by health insurers: The impact of legal protections. *Genetics in Medicine*, 2, 214–221.
- International Society of Nursing in Genetics, Inc. (1998). *Statement on the scope and standards of genetic clinical nursing practice*. Washington, DC: American Nurses Publishing.
- Lawrence, W.F., Peshkin, B.N., Liang, W., Isaacs, C., Lerman, C., & Mandelblatt, J.S. (2001). Cost of genetic counseling and testing for BRCA1 and BRCA2 breast cancer susceptibility mutations. *Cancer Epidemiology, Biomarkers and Prevention*, 10, 475–481.
- Oncology Nursing Society. (2002). *Cancer predisposition genetic testing and risk assessment counseling* [Position statement]. Pittsburgh, PA: Author.
- Rieger, P.T., & Pentz, R.D. (1999). Genetic testing and informed consent. *Seminars in Oncology Nursing*, 15, 104–115.
- Surbone, A. (2001). Ethical implications of genetic testing for breast cancer susceptibility. *Critical Reviews in Oncology/Hematology*, 40, 149–157.
- Williams, J.K., & Lea, D.H. (1995). Applying new genetic technologies: Assessment and ethical considerations. *Nurse Practitioner*, 20(7), 21–26.
- ### Pharmacogenetics and Cancer
- Anzick, S.L., & Trent, J.M. (2002). Role of genomics in identifying new targets for cancer therapy. *Oncology*, 16(5 Suppl. 4), 7–13.
- Danzon, P., & Towse, A. (2002). The economics of gene therapy and of pharmacogenetics. *Value in Health*, 5(1), 5–13.
- Hutchinson, E. (2001). Working towards tailored therapy for cancer. *Lancet*, 357, 1508–1510.
- Innocenti, F., & Ratain, M.J. (2002). Update on pharmacogenetics in cancer chemotherapy. *European Journal of Cancer*, 38, 639–644.
- Loni, L., Del Tacca, M., & Danesi, R. (2001). Pharmacogenetics of anticancer drugs in non-Hodgkin lymphomas. *British Journal of Cancer*, 85, 1425–1431.
- Nagasubramanian, R., Innocenti, F., & Ratain, M.J. (2003). Pharmacogenetics in cancer treatment. *Annual Review of Medicine*, 54, 437–452.
- Raghavan, D. (2003). Molecular targeting and pharmacogenomics in the management of advanced bladder cancer. *Cancer*, 97(8 Suppl.), 2083–2089.
- Relling, M.V., & Dervieux, T. (2001). Pharmacogenetics and cancer therapy. *National Review of Cancer*, 2, 99–108.
- Seufferlein, T., & Boehm, B.O. (2002). The impact of pharmacogenomics on gastrointestinal cancer therapy. *Pharmacogenomics*, 3, 625–633.
- Tsongalis, G.J., Cartun, R.W., & Ricci, A. (2000). Gene amplification as means for determining therapeutic strategies in human cancers. *Clinical Chemistry and Laboratory Medicine*, 38, 837–839.
- Watters, J.W., & McLeod, H.L. (2003). Cancer pharmacogenetics: Current and future applications. *Biochimica et Biophysica Acta*, 1603, 99–111.
- Workman, P. (2002). The impact of genomic and proteomic technologies on the development of new cancer drugs. *Annals of Oncology*, 13(Suppl. 4), 115–124.
- ### Psychological Aspects of Genetics in Cancer Care
- Armstrong, K., Calzone, K., Stopfer, J., Fitzgerald, G., Coyne, J., & Weber, B. (2000). Factors associated with decisions about clinical BRCA1/2 testing. *Cancer Epidemiology, Biomarkers and Prevention*, 9, 1251–1254.
- Biesecker, B.B., Ishibe, N., Hadley, D.W., Giambresini, T.R., Kase, R.G., Lerman, C., et al. (2000). Psychosocial factors predicting BRCA1/BRCA2 testing decisions in members of hereditary breast and ovarian cancer families. *American Journal of Medical Genetics*, 93, 257–263.
- Bonadona, V., Saltel, P., Desseigne, F., Mignotte, H., Saurin, J.C., Wang, Q., et al. (2002). Cancer patients who experienced diagnostic genetic testing for cancer susceptibility: Reactions and behavior after the disclosure of a positive test result. *Cancer Epidemiology, Biomarkers and Prevention*, 11, 97–104.
- Broadstock, M., Michie, S., & Marteau, T. (2000). Psychological consequences of predictive genetic testing: A systemic review. *European Journal of Human Genetics*, 8, 731–738.
- Codori, A.M., Zawacki, K.L., Petersen, G.M., & Giardiello, F.M. (2003). Genetic testing for hereditary colorectal cancer in children: Long-term psychological effects. *American Journal of Medical Genetics*, 116A, 117–128.
- Coyne, J., Kruus, L., Racioppo, M., Calzone, K., & Armstrong, K. (2003). What do ratings of cancer-specific distress mean among women at high risk of breast and ovarian cancer? *American Journal of Medical Genetics*, 116A, 222–228.
- Dorval, M., Patenaude, A., Schneider, K., Kieffer, S., DiGianni, L., Kalkbrenner, K., et al. (2000). Anticipated versus actual emotional reactions to disclosure of cancer genetic test results: Findings from p53 and BRCA1 testing programs. *Journal of Clinical Oncology*, 18, 2135–2142.
- Freyer, G., Dazord, A., Schlumberger, M., Conte-Devolx, B., Ligneau, B., Trillet-Lenoir, V., et al. (1999). Psychosocial impact of genetic testing in familial medullary-thyroid carcinoma: A multicentric pilot-evaluation. *Annals of Oncology*, 10, 87–95.
- Grosfeld, F.J., Lips, C.J., Beemer, F.A., Blijham, G.H., Quirijnen, J.M., Mastenbroek, M.P., et al. (2000). Distress in MEN 2 family members and partners prior to DNA test disclosure. Multiple endocrine neoplasia type 2. *American Journal of Medical Genetics*, 91, 1–7.
- Johnson, K.A., Rosenblum-Vos, L., Petersen, G.M., Brensinger, J.D., Giardiello, F.M., & Griffin, C.A. (2000). Response to genetic counseling and testing for the APC I1307K mutation. *American Journal of Medical Genetics*, 91, 207–211.
- Jordan, J., Evans, G., Evers-Kiebooms, G., Julian-Reynier, C., Kash, K., & Watson, M. (2002). Congress report of the Seventh International Meeting on Psychosocial Aspects of Genetic Testing for Hereditary Breast and/or Ovarian Cancer (HBOC) and Hereditary Non-Polyposis Colorectal Cancer (HNPCC). *Psycho-Oncology*, 11, 536–539.
- Lerman, C., Croyle, R.T., Tercyak, K.P., & Hamann, H. (2002). Genetic testing: Psychosocial aspects and implications. *Journal of Consulting and Clinical Psychology*, 70, 784–797.
- Lerman, C., Hughes, C., Trock, B.J., Myers, R.E., Main, D., Bonney, A., et al. (1999). Genetic testing in families with hereditary nonpolyposis colon cancer. *JAMA*, 281, 1618–1622.
- Pasacreta, J., Jacobs, L., & Cataldo, J. (2002). Genetic testing for breast and ovarian cancer risk: The psychosocial issues. *American Journal of Nursing*, 102, 40–47.
- Tercyak, K.P., Peshkin, B.N., Streisand, R., & Lerman, C. (2001). Psychological issues among children of hereditary breast cancer gene (BRCA1/2) testing participants. *Psycho-Oncology*, 10, 336–346.