Annotated Bibliography

Byrski, T., Huzarski, T., Dent, R., Gronwald, J., Zuziak, D., Cybulski, C.,… & Narod, A. (2009). *Response to neoadjuvant therapy with cisplatin in brca1-positive breast cancer patients*. (2nd ed., Vol. 115, pp. 359-363). Spinger Science business Media. Retrieved from http://www.springerlink.com/content/v06834628646524p/

This study tested the response to chemotherapy in breast cancer patients that carried the BRCA1 gene. In two studies done prior to this study, those having breast cancer and being BRCA1 positive showed to be more sensitive to chemotherapy than those with nonhereditary tumors. In this study 10 patients with breast cancer and BRCA positive were used. Each patient was treated with four cycles of Cisplatin chemotherapy, mastectomy and axillary lymph node dissection, and post-operative chemotherapy. 90% of patients achieved a complete pathological response with no residual disease in the breasts or lymph nodes. The remaining patient had no residual disease in the breasts but three out of the eleven lymph nodes taken were positive for tumor cells. This source shows that BRCA1 positive patients with breast cancer may be more sensitive to chemotherapy. However, this was a very small sample size so more studies need to be done. This source is useful to my literature review because it shows a possible treatment option to people with breast cancer and who are BRCA1 positive. It also shows those who know they have the mutation but have not yet been diagnosed with breast cancer that they have other options besides having a mastectomy at an early age.

Futreal, A., Liu, Q., Shattuck-Eidens, D., Cochran, C., Harshman, K., Tavtigian, S., ..., & Wiseman, R. (1994). *Brca1 mutations in primary breast and ovarian carcinomas*. (Vol. 266http://www.jstor.org/stable/2884728, pp. 120-122). American Association for the Advancement of Science.

The BRCA1 gene has been localized to chromosome 17q. This study was done to test “the hypothesis that BRCA1 is a tumor suppressor gene that has a role in both inherited and sporadic breast and ovarian cancers.” They tested this hypothesis by “the identification of BRCA1 by positional cloning.” 50% of breast carcinomas and 57% of ovarian carcinomas showed loss of heterozygosity (LOH), which was consistent with previous measurements. Thirty-two (32) subjects with breast tumors and twelve (12) subjects with ovarian tumors exhibiting LOH were examined for BRCA1 mutations. A total of four mutations were found; three from the breast tumors and one from the ovarian tumors. All of these mutations were germ-line and occurred in early onset cancers. Evidence suggests that these mutations represent BRCA susceptibility alleles. The results of this study show that the mutation of BRCA1 may not be critical in the formation of breast and ovarian cancer in the absence of a mutant germ-line allele. This article shows how the BRCA1 gene is related to early onset germ-line mutations in breast and ovarian cancer patients. It has been cited 1,050 times showing that it is creditable.

Lerman, C., Daly, M., Masny, A., & Balshem, A. (1994). *Attitudes about genetic testing for breast-ovarian cancer susceptibility*. (4 ed., Vol. 12, pp. 843-850). Journal of Clinical Oncology. Retrieved from http://jco.ascopubs.org/content/12/4/843.full.pdf

BRCA1 is a major breast-cancer susceptibility gene. This study was conducted to examine attitudes about genetic testing for BRCA1. The subjects for this study were 121 women ages 18-74 with a family history of ovarian cancer in one or more first degree relatives. Self-report questionnaires were sent out followed by a short telephone interview. Sociodemographic, ovarian risk, and psychological factors were measured in the telephone interviews. Of the respondents, 75% of subjects stated that they would definitely want to be tested for BRCA1, 20% said that they would most likely want to get tested, 2% said they would not want to be tested, and 3% said they were uncertain. Those who had an education higher than high school were more interested in the test than those with a high school education or less. Interest also went down with increasing age. Regarding attitudes, 80% of subjects said they would feel depressed if they got a positive test result, 77% expect to have high anxiety, and 68% said they would feel more in control. With a negative test result, 82% of subjects expected to feel more in control and have a better quality of life. This article shows the high interest in the genetic test for BRCA1. It also shows how the outcome can expect to affect individuals. However this article was written before the test was available for the general public. With increased knowledge about the test and how it affect chances of cancer may have changed these result greatly since this study was conducted.

Maxwell, K., & Domchek, S. (2012). *Cancer treatment according to brca1 and brca2 mutations*. (Vol. 9, pp. 520-528). Macmillan Publishers. Retrieved from http://www.nature.com/nrclinonc/journal/v9/n9/full/nrclinonc.2012.123.html

Having the BRCA1 or BRCA2 susceptibility gene has been known to increase the risk of breast and ovarian cancer. Knowing that someone has one of these germ line mutations changes everything about the care given to that patient, including “specific screening and prevention strategies.” Recent advancements in technology have increased understanding of the function on BRCA1 and BRCA2 which has led to clinical trials testing different therapies. One of these therapies is PARP inhibitors. However, the development of PARP inhibitors has not been as rapid as had been planned and many challenges have risen. Advancements in molecular medicines and targeted therapies have been able to make many changes in the practice of oncology but with this many new challenges have risen. I believe that this article will be beneficial to my literature review because it points out that by knowing you have a BRCA mutation you can tailor screenings and treatments to fit you. However it also shows the challenges that can come up when working with new treatments.

Yang, D., Khan, S., Sun, Y., Hess, K., Shmulevich, I., Sood, A., & Zhang, W. (2011). *Association of brca1 and brca2 mutations with survival, chemotherapy sensitivity, and gene mutator phenotype in patients with ovarian cancer*. (Vol. 306). The Journal of the American Medical Association. Retrieved from http://jama.jamanetwork.com/article.aspx?articleid=1104495

The objective of this study was to test the significance of BRCA1 /2 in ovarian cancer. To do this, 316 high-grade serous ovarian cancer patients were chosen and observed based on clinical data. Overall survival, progression free survival and chemotherapy response were used to determine outcomes. In this observational study cases of BRCA2 had significantly higher overall survival, progression free survival and chemotherapy response. This article shows that chemotherapy is more sensitive for ovarian cancer for those who have the BRCA2 mutation over BRCA1 and BRCA wild type. This article will be useful to my literature review because other studies have found that those who have breast cancer and the BRCA1 gene have shown more sensitivity to certain versions of chemotherapy.