

# ABORTION AND BREAST CANCER: THE LINK THAT WON'T GO AWAY

*By Angela Lanfranchi, M.D., FACS*

There are many well established and well-known causes of breast cancer, such as inheriting a BRCA gene (a defective gene associated with increased breast cancer risk) and being exposed to oral contraceptives and hormone replacement therapy. There are lesser known risks of breast cancer such as cigarette smoking before a full term pregnancy and induced abortion. But just as only 15% of people who smoke will get lung cancer and only about 5 – 10% of women with breast cancer develop this cancer because they had an abortion, we should still advise the public of these avoidable risks, however small. The vast majority of women with breast cancer have not had an abortion, but there are some women with breast cancer that have abortion as an attributable risk. Women need this information to make informed choices and to understand when to get screened for cancer if they are at increased risk, beginning approximately 8 to 10 years after the risk was taken.

Over fifty years ago, in April 1957, the first study reporting a link between abortion and an increased risk of breast cancer was published in a major medical journal. At a time when few countries had legalized abortion, the authors found that Japanese women who'd had an abortion had nearly three times as high a risk of breast cancer as those who had not.<sup>1</sup> By 1995, after abortion was widely legalized in the West, 17 studies worldwide (8 of them studying American women) showed a statistically significant abortion breast cancer link (or "ABC link").<sup>2</sup> Yet few medical professionals or members of the public knew of these important studies.

Over the last thirty years, 48 million abortions have been done on American women and breast cancer incidence has risen 40%. The pattern has been seen in other countries as well. Romania enjoyed one of the lowest breast cancer rates when abortion was illegal, but has developed one of the world's highest rates since abortion was legalized. In the United Kingdom, breast cancer rates parallel abortion rates, with highest rates in England and lowest in Northern Ireland. China has had a 40% increase in breast cancer rates since it implemented its policy of one-child-per-family and forced abortions. Actuary Patrick Carroll, looking at data from several countries, concluded that abortion is the greatest predictor of a country's breast cancer rate.<sup>3</sup>

Over ten years ago, in 1996, Dr. Joel Brind and colleagues from Pennsylvania State University published a meta-analysis of all the known published studies to date on breast cancer that distinguished between induced and spontaneous abortions (miscarriages).<sup>4</sup> That rigorous quantitative analysis demonstrated a 30% increased risk of breast cancer in women who had an induced abortion. It established induced abortion as an independent risk for breast cancer, beyond the indisputable fact that women who abort lose the naturally occurring protection against breast cancer that develops by carrying the pregnancy to full term. The publication of these findings created a furor among those who believed this information would adversely affect reproductive "choice." Dr. Stuart Donnan, editor of the British journal where it was published, commented that some critics were trying to practice an "excessive paternalistic censorship ... of the data" on the ABC link.<sup>5</sup>

In the United States, Dr. Janet Daling also sparked controversy when she published her findings in the Journal of the National Cancer Institute (NCI) in 1994.<sup>6</sup> Daling's study showed a statistically significant increased risk of breast cancer in women with induced abortion, especially young women with a family history of cancer. But an accompanying editorial downplayed the results, saying that "it is difficult to see how they will be informative to the public."<sup>7</sup> Dr. Daling responded to critics that she was adamantly pro-choice, had three sisters with breast cancer, and

wished the results of her study had been different, but her data were “rock solid.”<sup>8</sup> When asked to speak on the topic, she declined, saying she “was tired of having rocks thrown at her.”<sup>9</sup>

In the last ten years, many studies have been published claiming there is no ABC link. Dr. Brind published an analysis of those studies in 2005, demonstrating flaws in their design, methods and statistical analysis.<sup>10</sup> To understand these flaws, it is useful to review the biology that underlies and explains the ABC link, and the reasons why some may want to deny this inconvenient truth.

### **The Biology of Pregnancy Outcomes and Breast Cancer Risk**

In the 1970s, when researcher Dr. Irma Russo purchased some rats for breast cancer research, the dealer assured her they would reliably form breast cancers when given a carcinogen—provided she kept them from becoming pregnant first.<sup>11</sup> She decided to investigate why a carcinogen would not cause cancer in rats with a litter of pups. In 1980, Drs. Jose and Irma Russo published their findings: about 70% of both aborted and virgin rats developed breast cancer when exposed to a carcinogen, but rats that had given birth before exposure were protected from cancer.<sup>12</sup>

Years of published research have shed light on the breast maturation process that accounts for the protective effect of a full term pregnancy.<sup>13</sup> During pregnancy breasts enlarge, doubling in volume. Due to the stimulating hormones estrogen and progesterone, the number of lobules (units of breast tissue comprised of a duct and several milk glands) increases in preparation for breast feeding. Under the influence of the hormones hCG and hPL, made by a baby in his mother’s womb, the mother’s breast also matures so that cancer-vulnerable Type 1 and 2 lobules become cancer resistant Type 4 lobules containing milk. Type 4 lobules later regress to Type 3 after weaning, but retain the genetic changes which make them cancer resistant.

Most of the breast maturation needed for resistance to breast cancer does not occur, however, until after 32 weeks of pregnancy,<sup>14</sup> and gaining maximum protection at 40 weeks (full term). This is why a premature delivery before 32 weeks more than doubles breast cancer risk.<sup>15</sup> Induced abortion before 32 weeks also increases the risk, in proportion to the length of pregnancy before the abortion occurs.<sup>16</sup> A pregnancy ending between 32 and 36 weeks has about 90% of the protective effect of a full-term pregnancy of 40 weeks.<sup>17</sup> In terms of breast cancer risk, there is no difference between a premature delivery and a late-term abortion before 32 weeks because the hormonal changes to the breast are the same and they differ only in whether or not the baby is alive when the pregnancy ends.

About 23% of all pregnancies end in spontaneous abortions (i.e., miscarriages) in the first 11 weeks (in the first trimester). In most first-trimester pregnancies which end in miscarriage, the pregnancy hormones are lower than in a normal pregnancy due to either fetal or ovarian abnormality. (This is why women who miscarry at this stage may report never having felt pregnant.) Therefore, the breasts may not grow a significant number of Type 1 and 2 lobules (the places where cancer starts) in response to the pregnancy. Early miscarriage therefore does not increase the risk of breast cancer as does an induced abortion terminating a normal pregnancy.

A woman who is pregnant can legally choose an abortion or carry her baby to full term. By carrying her baby to full term, she matures about 85% of her breast tissue to cancer resistant lobules, thereby lowering her long-term breast cancer risk, just by that fact alone. She loses the protective effect through abortion.

The “independent risk,” i.e., leaving her breasts with more places for cancer to start, is contested by some epidemiologic studies, but is consistent with all known facts of breast development in

texts and literature. She has permanent changes in her breasts caused by the pregnancy hormones and the baby's pheromones. These changes will not reduce cancer risk unless the pregnancy continues to at least 32 weeks. If pregnancy is interrupted, her breasts are left with more cancer-susceptible lobules than when her pregnancy began.<sup>18</sup>

Additionally, forty-nine studies have concluded that induced abortion increases the risk of premature delivery in a subsequent pregnancy. So induced abortion not only adversely affects the health of later children who may be born prematurely, but it can also increase the mother's health risk of developing breast cancer.

If abortion is so clearly linked to breast cancer, why do so few physicians and women know about it?

### **Ideology, Breast Cancer and Abortion**

Studies in the last ten years showing little or no association between breast cancer and abortion have so many flaws that they prompted Dr. Edward Furton, staff ethicist at the National Catholic Bioethics Center, to write "The Corruption of Science by Ideology" in 2004. Dr. Furton decried the "unwillingness of scientists to speak out against the shoddy research that is being advanced by those who deny the abortion-breast cancer link."<sup>19</sup>

For example, in 2004 the British journal *Lancet* published a meta-analysis by Valerie Beral et al. of 52 abortion-breast cancer studies.<sup>20</sup> In a meta-analysis, data is reanalyzed from existing studies to show an overall trend. Results can be skewed by including studies not based on sound scientific methodology, and by ignoring studies that contradict the researchers' desired outcome. Inexplicably, data from more than half the studies selected by Beral (28 of 52) had not even been published in peer-reviewed journals. Beral also excluded 15 peer-reviewed studies—whose findings supported the ABC link—for invalid, non-scientific reasons (e.g., the principal investigator could not be found, perhaps due to his death or retirement in the intervening 20 years). Ten of the 15 excluded studies showed a statistically significant association between abortion and breast cancer; collectively the excluded studies showed about an 80% increased risk after abortion. Furthermore, Beral included three studies known to have major methodological flaws, including one that misclassified 60,000 women as not having had abortions when government records show they did.<sup>21</sup>

Another error in the Beral study, common to studies finding no ABC link, is to discount data from retrospective studies on the ground of "recall bias." The assumption is that women with breast cancer when interviewed about abortion history will more accurately recall and report their past abortions than those without breast cancer. Recall bias has been studied several times, and found to be non-existent.<sup>22</sup>

A third error made by Beral and others is to use an inappropriate comparison group. For example, they compare women who aborted a pregnancy to women who have never been pregnant. But the more valid comparison is to pregnant women who carried to term. As soon as a woman becomes pregnant (even before implantation), her estrogen levels start to rise, causing the number of Type 1 and 2 lobules to increase. Thereafter she is physiologically different from a woman who has never been pregnant. Two studies published in 1999 showed that breast cancer risk more than doubled when pregnancy ended before 32 weeks from induced abortion, late miscarriage or premature birth.<sup>23</sup>

A study by Karin Michels et al.,<sup>24</sup> published in the April 2007 *Archives of Internal Medicine*, was reported in the *New York Times* and other news outlets as showing "Breast Cancer Not Linked to

Abortion.”<sup>25</sup> This study began with over 100,000 women between 29 and 46 years of age, and interviewed them every two years about abortions, miscarriages and new breast cancer diagnoses. In finding no statistically significant association between abortion and breast cancer, the researchers committed at least 5 serious errors which have recently been detailed in the medical literature.<sup>26</sup> Particularly egregious was the deletion of an important adjustment for spontaneous abortions from the overall result. This flaw alone reduced the reported risk increase from an almost significant 10% to a non-significant 1%. Also striking was the authors’ complete omission of mention of the only other primary research study on the ABC link which Michels herself had co-authored. This was a 1995 study of Greek women, which had reported a statistically significant 51% increase in breast cancer risk with abortion, an increase that was specifically claimed not to have resulted from “recall bias.” But in her latest study, Michels still relied on the discredited recall bias hypothesis, and mention of her earlier study would have contradicted that claim.

### **What May Cause the Denial of the ABC Link?**

First, while we may idealize scientists as being above all personal biases and influences, the reality is that they, too, are human and can be influenced by many things other than the facts. Those influences may include cultural prejudices, sources of funding for research, and even sheer resistance to new or unwelcome ideas.

In a 2005 study “Scientists Behaving Badly,” the scientific journal *Nature*<sup>27</sup> revealed that, in an anonymous questionnaire, 15.5% of scientists who received grants from the National Institutes of Health admitted to changing study design, results and methodologies “in response to pressure from a funding source.” Scientists studying cancer depend largely on grants from the National Cancer Institute – and the NCI has shown a definite bias on this issue, inviting no known defender of the ABC link to present on this issue at its 2003 workshop<sup>28</sup> convened ostensibly to discuss such question.

Resistance to information whose source is considered “out of the mainstream” is common enough in scientific circles to have its own name, the Semmelweis Phenomenon. In the 1840s, before the germ theory of disease was widely accepted, Dr. Ignaz Semmelweis proved that hand-washing saved women’s lives in maternity wards, reducing mortality to 3% from 30%. Yet the medical establishment ignored his findings for decades.

### **Ideology of “Safe” Abortion**

This tendency to ignore or deny inconvenient information is especially strong when the subject is abortion. Documentation and public awareness of the negative effects of abortion—especially the ABC link, and emotional and psychological difficulties after abortion—poses a danger to Big Abortion, in the same way studies linking cigarettes to cancer posed a danger to Big Tobacco.

The first study linking cigarettes to lung cancer was published in 1928, and the first Surgeon General’s warning, without the support of the AMA, was announced in 1964. The Bradford-Hill epidemiologic criteria developed to evaluate causality, ultimately used to show the tobacco-lung cancer link in the 1960s, are the same criteria that support the ABC link.<sup>29</sup>

The Abortion Breast Cancer Link is not likely to be disproved, because this finding rests on the biological facts about our created bodies. Pro-choice columnist Ellen Goodman in 2004 railed that research linking breast cancer to abortion “keeps reappearing no matter how many scientists

drive a stake through its heart.”<sup>30</sup> But the link is based on how we are made, and this reality won’t ever go away.

*Angela Lanfranchi, M.D., FACS is a Clinical Assistant Professor of Surgery at UMDNJ Robert Wood Johnson Medical School and Vice-President and co-founder of the Breast Cancer Prevention Institute. She serves on the Expert Advisory Panel of the New Jersey State Board of Medical Examiners, the Medical Advisory Board of the Wellness Community of Central New Jersey and the Somerset County Cancer Coalition. She has been in private practice of surgery since 1984 and specializes in the treatment of breast cancer.*

From Respect Life Program 2007-2008. Reprinted with permission of the U.S. Conference of Catholic Bishops, Washington, D.C. All rights reserved.

- 1 M. Segi et al., “An epidemiological study on cancer in Japan,” *GANN* 48 (suppl) (1957):1-63.
- 2 A. Lanfranchi, Chapter 8, in E. Bachiochi, *The Cost of Choice, Women Evaluate the Impact of Abortion* (San Francisco: Encounter Books, 2004).
- 3 P. Carroll, “Trends and Risk Factors in British Female Breast Cancer,” *Joint Statistical Meeting 2005*, American Statistical Association Statistics in Epidemiology, 2511-2519.
- 4 J. Brind et al., “Induced Abortion as an Independent Risk Factor for Breast Cancer: A Comprehensive Review and Meta-Analysis,” *Journal of Epidemiology and Community Health* 50 (October 1996): 481-496.
- 5 S. Donnan, “Abortion, breast cancer, and impact factors—in this number and the last,” *Journal of Epidemiology and Community Health* 50 (1996): 605.
- 6 J.R. Daling et al., “Risk of Breast Cancer Among Young Women: Relationship to Induced Abortion,” *Journal of the National Cancer Institute* 86 (November 2, 1994): 1584- 1592.
- 7 L. Rosenberg, “Induced abortion and breast cancer: more scientific data are needed,” *Journal of the National Cancer Institute* 86 (November 2, 1994): 1569-1570.
- 8 J.R. Daling, quoted in Joe Gelman, “Findings linking cancer to abortions a well-kept secret,” *Los Angeles Daily News*, Viewpoint, September 28, 1997.
- 9 J.R. Daling, Ph.D., personal communication with the author.
- 10 J. Brind, “Induced abortion as an independent risk factor for breast cancer: a critical review of recent studies based on prospective data,” *Journal of American Physicians and Surgeons* 10:4 (Winter 2005) 105-10.
- 11 I.H. Russo, personal communication with the author.
- 12 J. Russo and I.H. Russo, “Susceptibility of the Mammary Gland to Carcinogenesis” *American Journal of Pathology* 100 (August 1, 1980): 497-512.
- 13 J. Russo, “Cancer risk related to mammary gland structure and development, *Microscopy Research and Technique* 52 (2001): 204-233; J. Russo et al., “Mammary gland architecture as a determining factor in the susceptibility of the human breast to cancer,” *The Breast Journal* 7 (2001): 278-291.
- 14 L.J. Vatten et al., “Pregnancy related protection against breast cancer depends on length of gestation,” *British Journal of Cancer* 87 (2002): 289-90.
- 15 M. Melbye et al., “Preterm delivery and risk of breast cancer,” *British Journal of Cancer* 80 (1999): 609-13.
- 16 M. Melbye et al., “Induced Abortion and the Risk of Breast Cancer,” *New England Journal of Medicine* 336.2 (Jan. 9, 1997): 81-85.
- 17 J.M. Thorp et al., “Long-term physical and psychological health consequences of induced abortion: a review of the evidence,” *Obstetrical and Gynecological Survey* 58 (2001): 1.
- 18 Breast Cancer Prevention Institute, *Reproductive Breast Cancer Risks and Breast Lobule Maturation* (Poughkeepsie, N.Y.: Breast Cancer Prevention Institute, 2007); available at [www.bcpinstitute.org](http://www.bcpinstitute.org) under Resources.

- 19 E. Furton, "The Corruption of Science by Ideology," *Ethics & Medics* 29:12 (December 2004): 1-2.
- 20 V. Beral et al., "Breast Cancer and Abortion: Collaborative Reanalysis of Data from 53 Epidemiological Studies, Including 83,000 Women with Breast Cancer from 16 Countries," *Lancet* 363:9414 (March 27, 2004): 1007-1016.
- 21 A. Lanfranchi, "The Abortion-Breast Cancer Link Revisited," *Ethics & Medics* 29:11 (Nov. 2004).
- 22 Lanfranchi, note 21.
- 23 M. Melbye et al., "Preterm Delivery and Risk of Breast Cancer," *British Journal of Cancer* 80.3-4 (May 1999) 609-613; C. Hsieh et al., "Delivery of Premature Newborns and Maternal Breast Cancer Risk," *Lancet* 353.9160 (April 10, 1999) 1239.
- 24 K. Michels et al., "Induced and Spontaneous Abortion and Incidence of Breast Cancer Among Young Women," *Archives of Internal Medicine* 167 (April 2007) 814-20.
- 25 Nicholas Bakalar, "Breast Cancer Not Linked to Abortion, Study Says," *New York Times*, April 24, 2007, Health Section.
- 26 J. Brind, "Induced Abortion and Breast Cancer Risk: A Critical Analysis of the Report of the Harvard Nurses Study II," *Journal of American Physicians and Surgeons* 12.2 (Summer 2007); in press.
- 27 B. Martinson et al., "Scientists Behaving Badly," *Nature* 435:9 (2005) 737-8.
- 28 J. Brind, "Early Reproductive Events and Breast Cancer: A Minority Report," (March 10, 2003); available at [http://www.bcpinstitute.org/nci\\_minority\\_rpt.htm](http://www.bcpinstitute.org/nci_minority_rpt.htm) (Breast Cancer Prevention Institute).
- 29 A. Lanfranchi, "The Breast Physiology and the Epidemiology of the Abortion Breast Cancer Link," *Imago Hominis* (2005) Band 12: Heft3: 228-36.
- 30 Ellen Goodman, "Just the Schmacks, Ma'am," *Boston Globe*, May 13, 2004.