

Women with early breast cancer who undergo lumpectomy followed by radiation therapy have the same survival rate over a 10-year period as women who undergo mastectomy. Similarly, women with advanced breast cancer were found to have a better survival rate with postoperative chemotherapy than with surgery alone. These results are from two separate, large-scale studies, published in the April 6 issue of *The New England Journal of Medicine*.

The first study, conducted by researchers at the National Cancer Institute, examined the length of survival of 247 patients with early-stage breast cancer. Approximately 70% of these women were alive and disease-free during this 10-year follow-up period, regardless of the type of treatment received. The women in this group had undergone lymphadenectomy.

The second study, began 20 years ago, included 386 Italian women whose breast cancer had metastasized to the axillary nodes. The women who underwent radical mastectomy followed by combination chemotherapy were more likely to survive and have fewer recurrences of cancer than women who had mastectomy alone.

However, chemotherapy was not found to prolong the survival of women who were first diagnosed with breast cancer after menopause.

Tens of thousands of fetuses and infants are harmed each year in the United States by mothers who smoke while pregnant. For the first time, researchers estimated the number of miscarriages, stillborn births, and low-birth-weight infants attributed to cigarette smoking during pregnancy.

Based on data collected from approximately 100 studies during the past 40 years, researchers at the University of Massachusetts and Brigham and Women's Hospital in Boston estimate that 115,000 miscarriages and 5600 stillborn births occur each year to mothers who smoke. Cigarette smoking during pregnancy is also responsible for another 53,000 low-birth-weight newborns and 22,000 infants who require intensive medical care each year, estimate the researchers.

"The magnitude of the morbidity and mortality inflicted on fetuses and infants by smoking tobacco is a poignant reminder that use of tobacco products affects many innocent individuals who have not chosen to assume the risks involved," write researchers Robert A. Lew, MD, and Joseph R. DiFranza in the April issue of *The Journal of Family Practice*.

Persons found to carry a mutant gene that affects the blood-clotting protein factor V have a three-fold risk for having deep vein thrombosis develop.

Researchers at the Brigham and Women's Hospital in Boston surveyed 14,916 healthy male physicians in the United States and found that overall, 6% of these study participants carried the gene. Seven percent of the physicians aged 60 and older carried the gene. Although this study included only men, researchers believe the gene occurs equally in women. Women who carry this gene and who are taking oral contraceptives may be at an even higher risk than men of having deep vein thrombosis develop.

The April 6 issue of *The New England Journal of Medicine* features complete study results.

The human immunodeficiency virus (HIV) seems to develop a resistance to experimental protease inhibitors. Results from tests involving the drug MK-639 suggest that once the HIV is exposed to one protease inhibitor it becomes resistant to other such drugs.

In testing the drug on four HIV-infected patients, scientists at Merck Research Laboratories noted that the HIV mutated to varying degrees when exposed to a single protease inhibitor. This mutated version also showed signs of resistance to the five other protease inhibitors tested.

In one patient, signs of resistance to the protease inhibitor began to appear 24 weeks after the initiation of therapy; the other patients showed signs of resistance at 44 and 52 weeks. Resistance was measured based on the amount of protease inhibitor required to prevent the virus from reproducing itself. Whether such resistance will occur with combination protease inhibitor therapy is not yet known.

Despite these early findings, the researchers are continuing to investigate the efficacy of protease inhibitors in fighting the HIV infection.

Complete study results are published in the April 6 issue of *Nature*. ♦