1. INTRODUCTION

Breast cancer remains the most common cancer among women in the United States, and the second leading cause of death due to cancer, with approximately 43,300 deaths expected a year. After decades of increasing incidence rates, data from the Surveillance, Epidemiology, and End Results (SEER) program indicate a plateau in rates of new cases between 1990 and 1996 and a shift in stage from regional and distant stages to more localized disease (1). Over the same period, breast cancer death rates have declined (on average) by 1.7% a year (2) (Fig. 1). Despite these recent promising trends, breast cancer represents a significant personal and societal burden that affects women in the prime of their lives and accounts for a large portion of the health care budget. A long history of classical epidemiologic studies, now coupled with the new information emerging from the field of molecular genetics, is beginning to elucidate the basic mechanisms of breast carcinogenesis and allow development of novel treatment and prevention strategies.

2. GENERAL FEATURES

2.1. Age

The risk of developing breast cancer increases throughout a woman’s lifetime, and the disease is relatively rare in very young women. Rates begin to rise steeply at age 45 (3) (Fig. 2). Despite the lower rates for young, premenopausal women, those whose cancer is diagnosed before age 35 are more likely to be carriers of a breast cancer susceptibility gene and to present with higher grade tumors and more advanced stages, and to experience a more biologically aggressive form of the disease, which results in decreased disease-free and overall survival rates (4,5). The overall association of breast cancer incidence with increasing age is consistent with a stochastic model of breast cancer, wherein a progressive series of genetic changes within the cell is necessary for the evolution of the molecular changes leading to cancer initiation. It is
becoming increasingly clear that these genetic changes are the result of a multitude of risk-related factors.

2.2. Race/Ethnicity

There are striking racial/ethnic differences in both the incidence and mortality rates for breast cancer. Overall, rates are highest for Caucasian women, lowest for Native American and Korean women, and intermediate for African-American, other Asian, and Hispanic women (6) (Fig. 3). An interesting crossover phenomenon occurs among African-American women, with rates for women under age 40 significantly higher than those seen in young Caucasian women, while the opposite is seen in women over age 40 (7). Temporal differences among groups also exist, the most notable being the dispropor-