CORRESPONDENCE

Impact of Mammography on Breast Cancer Incidence in Vaud, Switzerland

There are several indications that breast cancer incidence is affected by mammographic screening. On a worldwide scale, for instance, breast cancer incidence rates are consistently highest in North America, where mammographic screening is more widely used [with about 30% of women reporting receiving a screening mammogram in the previous year (*1*)]; however, mortality is highest in Britain and other western European countries (*2*). Over the last decade, moreover, breast cancer incidence has been rising in the United States and various other developed countries, although mortality has remained constant (*2*). This geographical distribution and pattern of trends can be explained, at least in part, by the different use of mammographic screening in various populations. For example, a survey based on data from the Utah Cancer Registry (*3*) found that approximately 30% of all breast cancer cases were discovered by mammograms; among women 50–79 years old, the percentage thus detected is particularly high. To provide information representative of a European population, we conducted a survey on the process of breast cancer diagnosis of incident cases based on the data from the Vaud Cancer Registry in Switzerland.

The series was composed of 376 incident cases of breast cancer registered in 1989 and abstracted from the Vaud Cancer Registry file, which includes data concerning cases of malignant neoplasms in the Canton of Vaud, whose population was about 570 000 in 1989 (*4*). We sent a questionnaire to physicians to obtain information on clinical stage (TNM) and method of diagnosis (i.e., detected by the patient, medical examination, mammography, or other procedure). A total of 344 (91%) responses were obtained. No information on diagnostic method was available from 32 (9%) of the cases. Information on clinical stage of diagnosis was available for 367 (97%) cases. The remaining nine cases were assumed to be advanced tumors.

Of the 376 registered cases, only 32 (9%) were discovered through mammography, 81 (22%) by medical examination, 217 (58%) were detected by the patients themselves, and 46 (12%) patients could not provide reliable information on process of detection.

The distribution of cases by method of diagnosis and decade of age is given in Fig. 1. The highest proportion of cases detected by mammography (20%) was in women between the ages of 50 and 59, followed by women ages 60 to 69 (12%) years. No case was found at mammographic screening in women under the age of 35 years and only one case was found in a patient over the age of 70.

These 376 incident cases of breast cancer are further considered in Table 1 according to stage at diagnosis and overall age group. Cases of breast cancer detected by mammography were more frequently in a localized stage (56%) and less frequently in an advanced stage (6%) than those discovered by the patients themselves or by physical examination (about 30% localized, between 16% and 24% advanced), with no major difference between the two groups. The most advanced stage at presentation was found among women with an undefined process of discovery and particularly among those aged 55 or more years of age.

In Vaud, breast cancer incidence rose by 9% (from 65.4 to 71.4 per 100 000 [world standard]) between 1978 and 1988 (*6,7*), while on a national level in Switzerland, mortality rates have increased by approximately 10% during the same time period (*8,9*).

All of these estimates are subject to random variation and other sources of error or bias, which introduce substantial uncertainties in any interpretation. Still, the data presented do not suggest

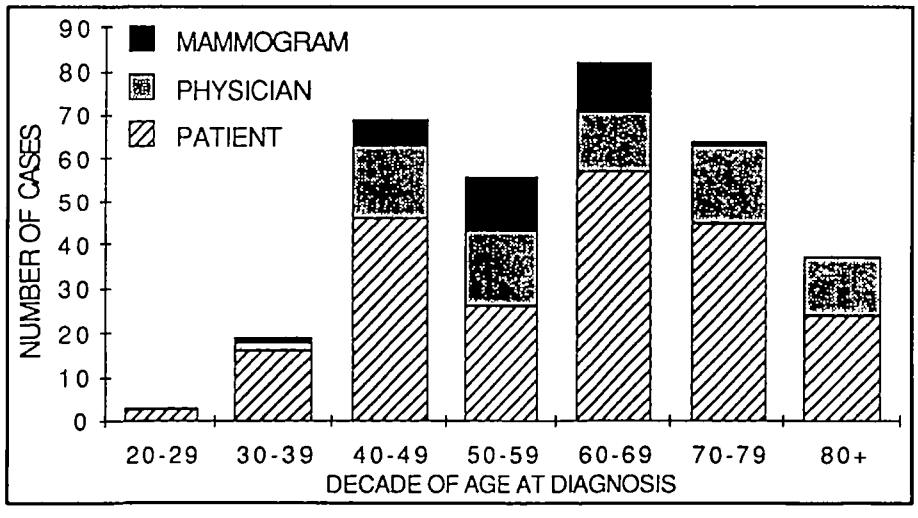

Fig. 1. Distribution of 376 incidence cases of breast cancer by method of diagnosis and age group in Vaud, Switzerland, 1989.

Table 1. Percent distribution of 376 incident cases of breast cancer according to method of discovery, age, and stage at diagnosis, Vaud, Switzerland, 1989

Method of diagnosis	Age <55 y, stage			Age ≥55 y, stage			Total, stage			No. of cases
	1	2	3*	1	2	3*	1	2	3*	
Mammography	62.5	31.3	6.3	50.0	43.8	6.3	56.3	37.5	6.3	32
Medical examination	40.0	56.7	3.3	29.4	47.1	23.5	33.3	50.6	16.0	81
Patient's detection	39.5	52.6	7.9	24.1	44.0	31.9	29.5	47.0	23.5	217
Other or unspecified†	30.8	38.5	30.8	12.1	39.4	48.5	17.4	39.1	43.5	46

*Includes TNM stages III (n = 58), IV (n = 19), or unknown (n = 9).
†Includes 32 cases (8.5%) for whom there was no response to the survey.

that the low rate of mammographic screening used in this European population has, to date, introduced substantial modifications in breast cancer incidence trends.

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Response

The data on methods of breast cancer detection in Switzerland (*1*) provide an interesting contrast to the data from the Utah study (*2*). The studies were fairly similar, but were conducted in areas with quite different levels of mammographic screening and different incidence and mortality rates as well as changes in these rates. Taken together, the results of the studies support the hypotheses that mammographic screening is effective in early detection, but that increased levels of screening may result, at least temporarily, in increased breast cancer incidence rates, particularly in women between the ages of 45 and 75 years. Other studies published in this Journal recently have also supported these hypotheses (*3,4*). Another explanation for some of the recent increases in breast cancer rates involves exogenous estrogens. It would be of interest to compare the estrogen experience in areas such as in the two above studies.

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Aspirin Use and Incidence of Large-Bowel Cancer in a California Retirement Community

Rosenberg and colleagues recently suggested that sustained use of nonsteroidal anti-inflammatory drugs (NSAIDs) reduces the incidence of large-bowel cancer (*1*). In a hospital-based case-control study, they found that the relative risk for large-bowel cancer for regular NSAID use, which was begun within the year before the interview, was 0.4. This contrasts with our previously reported finding of some increased risk of colon cancer with daily aspirin use (*2*). In this prospective cohort study of the 13 987 residents of Leisure World, Laguna Hills, Calif., the sex- and age-adjusted relative risk of colon cancer was 1.5 (95% confidence interval = 1.1 to 2.2) for daily aspirin users relative to non-users.

For this study, we mailed a detailed health questionnaire to all residents of this southern California retirement community in June 1981. This questionnaire included information on previous medical diagnoses including cancer and use of nonprescription analgesics. The cohort had follow-up that included all hospital admissions to three hospitals serving the area and for additional cancers reported to the tumor registries of five hospitals and of the Cancer Surveillance Programs of Orange County and of Los Angeles County. Death certificates were obtained for all decedents identified by search of the death records of the local health department, the obituary column of the local newspaper, information provided by relatives and friends, and by search of the National Death Index.

We extended our follow-up for two additional years. As of January 1, 1990, we had identified 231 incident cases of colon cancer among those who initially reported that they had not had colon cancer. We again found no evidence of a protective effect of aspirin on colon cancer risk (Table 1). With daily aspirin use, the relative risk of colon cancer was 1.46 in males and 1.01 in females. Subdividing cases of colon cancer further into right-sided (cecum to hepatic flex-