

Missed Opportunities for Early Diagnosis of Cancer of the Cervix

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Abstract: In a low-income community, 52 per cent of new invasive cancer of the cervix arose in women who had no previous Pap smear, while 62 per cent arose in women with no smear within five years. In the previous five years, 73 per cent of the unscreened women had received ambulatory medical care (including 41 per cent who had regular care for chronic conditions), while 16 per cent were hospitalized. Much of the unscreened low-income population could be reached by routine screening in regular ambulatory health services and hospitals. (*Am J Public Health* 70:418-420, 1980.)

Introduction

There has been a decline in the incidence of invasive cancer of the cervix, partly due to the widespread use of Pap smears which detect disease in the preinvasive stage.¹ It is now pertinent to ask whether the remaining 16,000 cases which develop annually,² are preventable by an extension of current programs to the unscreened population. Early screening programs showed that most new cases of invasive disease arose in unscreened populations,^{3,4} but recent reports suggest that invasive cancer develops even in well-screened populations.^{5,6}

The incidence of invasive cervical cancer is highest in poor and minority communities; in New York City the incidence for Blacks is 3.5 times that for Whites.⁷ Screening has been routine in all obstetric and gynecologic care for more than ten years. This study was undertaken to determine the factors bearing on prevention among women who developed invasive cervical cancer in Brooklyn, an area with below-average income and large Black, Hispanic and immigrant communities.

Methods

All patients admitted to Kings County and State University Hospitals (both serving the medically indigent commu-

nity in Brooklyn, New York) between July 1976 and December 1978 with a histologic diagnosis of invasive cervical cancer were included in this study.

Patients were interviewed about their previous Pap smears, earlier medical care, and hospitalizations. A medical history, including all hospitalizations, was obtained independently by the doctor responsible for the patient's care. Information on hospitalizations and previous health problems given to the study-interviewer was consistent with that given to the doctor in more than 90 per cent of patients.

All information on previous care at both hospitals was confirmed by review of medical records. With the patients' consent, records were requested from other doctors and hospitals. The hospital records were available for 82 per cent of the hospitalizations in the five years before the first evidence of disease. Information on Pap smears and reasons for hospitalization were consistent in 90 per cent. Records of ambulatory care in the previous five years were available for 59 per cent of women. Where information was vague or internally inconsistent or when the patient was incoherent or seriously ill, information was classified as unknown unless it could be confirmed from medical records.

Results

Ninety-seven women had a diagnosis of primary invasive cervical cancer in the study period. Fifty-one per cent were over 50 years old, 59 per cent had an annual income less than \$6,000, and 51 per cent had ten years or less of education. Eighty-six per cent of the women were Black or Hispanic and 33 per cent were born outside the United States. The median age at first intercourse was 18 years.

Information on previous Pap smears was available in 91 of the 97 women (Table 1). Forty-seven of the 91 women (52 per cent) had no previous smear, while 56 women (62 per cent) had no smear in the previous five years. Seventy-one per cent of women (32/45) aged 50 years or over had no previous smear compared to 33 per cent (15/46) of women less than 50 years of age. This difference was statistically significant (χ^2 $p < 0.01$).

The medical care received in the five years before the first evidence of disease is shown in Table 2. "Regular" medical care was defined as more than three visits to the same doctor or more than five visits to different doctors in the five-year period. "Episodic" care was defined as three or fewer visits to one doctor, or five or fewer visits to different doctors.

Forty-one (73 per cent) of the 56 unscreened women had some ambulatory care, including 23 women who had chronic conditions lasting more than one year. Nine of the un-

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TABLE 1—Previous Pap Smears by Age

Age	No Previous Smear	Time Since Previous Smear		Unknown	Total
		≤ 5 yrs	> 5 yrs		
< 50 yrs	15	23	8	1	47
≥ 50 yrs	32	12	1	5	50
Total	47	35	9	6	97

screened women (16 per cent) had been hospitalized for non-gynecologic reasons, seven in New York State. One woman admitted for an incomplete abortion had no Pap smear taken.

Thirty-one of the 35 screened women (89 per cent) had the Pap smear taken during ambulatory care. Four women had no smear taken during ambulatory care, but were screened during hospitalization.

Fifty-one per cent of all the women in the study received regular ambulatory care, but at least 27 of these 49 women received no Pap smear as part of this care. Among 39 women receiving regular medical care for chronic conditions, 23 had no smear as part of their ambulatory care. Only 15 per cent of the entire group had no medical contacts in the previous five years.

Of the 49 women who received regular ambulatory care, 30 attended private doctors or clinics, 12 used public clinics or hospital outpatient departments, and seven used a combination of both. No Pap smears were taken in 63 per cent of those receiving private care, in 58 per cent of those receiving public care and in 29 per cent of those receiving both.

Discussion

Our findings are consistent with earlier reports that new cases arise most frequently in unscreened populations^{3, 4} and

that screening is less frequent in low-income and non-white communities^{8, 9} especially among older women.^{10, 11}

The unscreened women had many contacts with the health system in the five years before the first sign of cancer. Such contacts represent missed opportunities for early diagnosis. Among the screened women there were missed opportunities for rescreening which might have led to earlier diagnosis.

Our finding that 16 per cent of unscreened women were hospitalized for non-gynecologic reasons emphasizes the importance of screening hospital inpatients. Pap smears were not taken in all hospitalizations despite the New York State law mandating smears on inpatients. Although the law has been in effect since 1968, the Bureau of Cancer Control did not monitor compliance until 1975 nor enforce implementation until later. The hospitalizations reported here occurred before effective enforcement.

Although 84 per cent of all women in this study had used ambulatory services, less than one-half had a smear during their care. Such missed opportunities for screening should be avoidable, at least for women receiving regular care for chronic conditions. Routine screening in hospital outpatient departments and public clinics would have reached about one-fourth of those receiving regular medical care. Screening in private offices and private clinics would have reached the remaining three-fourths. The problems of implementing programs in multiple small private facilities are severe. However, more extensive screening in all types of ambulatory care facilities is essential if the low-income population at risk for cervical cancer is to be reached.

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TABLE 2—Screening in Previous Five Years by Type of Medical Care

Type of Medical Care	Screening Status				Total	
	Unscreened Women	Screened women*		Unknown	No.	Per Cent
		Pap done	Pap not done			
Ambulatory Care						%
Regular	27	18	2	2	49	51
(Regular care for chronic problems)	23	12	2	2	39	40)
Episodic	14	13	1	4	32	33
None	15	—	1	—	16	16
TOTAL	56	31	4	6	97	100
Hospital Care						
Ob-Gyn Service	1	9	—	—	10	10
Other Service	9	4	4	—	17	18
Not Hospitalized	46	18	—	6	70	72
TOTAL	56	31	4	6	97	100

*Breakdown refers to Pap smear done or not done during medical care categorized in table.

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Cigarette Smoking and Age at Natural Menopause

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Abstract: In a cohort of 656 naturally postmenopausal women who were interviewed at age 60 to 69 years, and who had reached their menopause between the ages of 35 and 59 years, the mean age at menopause declined with increasing number of cigarettes smoked, from 49.4 years of age among women who had never smoked to 47.6 years of age among women who smoked at least 15 cigarettes per day ($p < 0.02$). The relationship was not attributable to the onset of menopause inducing women to take up smoking. (*Am J Public Health* 70:420-422, 1980.)

Introduction

Several studies¹⁻⁶ have suggested that cigarette smokers have an earlier natural menopause than non-smokers. However, these studies lacked sufficient data to give precise quantitative estimates of the effect of smoking on age at menopause. To provide such estimates, we studied the relationship in a cohort of 656 naturally postmenopausal women.

Methods

The data collection procedures used in this study have been described in detail elsewhere.^{7,8} Briefly, specially

trained nurse-monitors stationed in hospitals in seven metropolitan areas in the United States, one hospital in Canada, and two in Israel interview patients admitted to medical, surgical, gynecological, and other specialty wards. The information, recorded on standard forms, includes descriptive data (such as age); a detailed medical history, including age at menopause; and comprehensive information on drug use before admission. Details of use of a variety of other agents, such as coffee, alcohol, and cigarettes, are also recorded. Subsequently, a copy of the discharge summary is obtained and abstracted.

This report is based on women interviewed between July 1976 and December 1978. Women were included if they were 60 to 69 years of age at the time of interview and reached a natural menopause between the ages of 35 and 59. It was further specified that all subjects must belong to one of three cigarette smoking categories: those who had never smoked, those who had stopped smoking permanently before the age of 35 (that is, before the earliest menopausal age in the cohort), and those who were current smokers at the time of interview and had started smoking before the age of 35. A total of 656 women met these criteria, and formed the final study population.

Results

The mean age at menopause was 49.4 years among women who had never smoked, 49.2 among ex-smokers, 48.0 among women who smoked 1 to 14 cigarettes per day, and 47.6 among those who smoked at least 15 cigarettes per day (Table 1). The differences between never-smokers and each of the three categories of current smokers were statistically significant ($p < 0.02$). Among the current smokers, the differences by level of smoking were not significant. In addition, when the data were subjected to multiple regression analysis, there was no significant trend in age at

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