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ORIGINAL RESEARCH

Does Access to Health Insurance and Health Care Positively Impact Disparities in Cervical Dysplasia and Cervical Cancer?

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Abstract

Objectives

Despite screening and vaccination strategies, the burden of cervical cancer disproportionately affects lower socioeconomic patients. The aim of this study was to determine the impact of access to health insurance and care in early diagnosis of cervical dysplasia and cancer.

Methods/Materials

A retrospective study of patients referred to an academic gynecologic oncology practice for cervical dysplasia or cancer from January 2009 to January 2014 was performed. Patients were excluded if they had another malignancy or insufficient records or follow-up. Demographic and detailed clinical data were examined.

Chi square and t-tests were performed to identify significant parameters.

Results

A total of 421 patients were evaluated and 277 met study criteria: 31% with carcinoma and 69% with dysplasia. The insurance distribution was significant between groups, with 65.8% having Medicaid/Medicare and 23.5% having private insurance in the cancer group compared with 35.9% and 58.8%, respectively, in the dysplasia group (P=0.001). Patients with Medicaid/Medicare were more likely to be diagnosed with advanced-stage (stage II-IV) disease than those with private insurance (75% vs. 25%, P=0.003). Charity care patients had a 33% rate of advanced-staged disease. Mean distance to the hospital was similar for cancer and dysplasia patients (39.3 miles vs 37 miles, P=0.374).

Differences in time since last gynecology visit were significant, with 96.3% of dysplasia patients having care within the past 3 years and 63.3% of cancer patients not having care (P=0.001). Age, race, English-speaking, and tobacco use were not significantly different between groups.

Conclusions

Despite access to insurance and health care, there was a staggering difference in early- vs. advanced-stage disease between government-issued and private insurance, despite there being no difference in distance and access to care. These findings can better inform us in reducing disparities in cervical cancer and in health education and outreach.

Introduction

Following the implementation of routine screening, cervical cancer has become a preventable disease. In the United States, the incidence of cervical cancer has decreased nationwide by 1.9%, as reported by the CDC in 2012 [1,2]. Annually, however, approximately 12,000 new cases are diagnosed, with over 4,000 women succumbing to the disease [2]. When detected early, cervical cancer is treatable with Stage I disease having a 5-year survival rate of 80-93% [3]. For this reason, emphasis has been placed on widespread screening and identifying populations at risk for exposure to the human papilloma virus (HPV), which accounts for approximately 70% of cervical cancer cases [4]. High risk HPV alone confers a 17% absolute risk of progression [5]. More specifically, HPV 16 has been identified as the most prevalent and persistent high-risk type that can progress to carcinoma [6], and has been the focus of vaccine strategies like Gardasil® and Cervarix® to decrease the incidence of HPV infection. As the ultimate form of prevention, vaccination is the best strategy for disease control. However, measuring the success of cervix cancer screening efforts by analyzing socioeconomic factors of pre-invasive and invasive cases is important for assessing potentially immediate healthcare interventions to reduce the disease burden on all insured people.

With progression of cervical intraepithelial neoplasia to invasive disease proceeding in a stepwise fashion, there are numerous opportunities to intervene before the onset of carcinoma. Socioeconomic factors that may contribute to a lack of screening include a lack of health insurance, lack of availability of physicians, living great distances from hospitals, and a lack of education regarding the importance of routine care. Furthermore, certain patient populations, such as black race and low income families, also have limited access to healthcare [7]. These factors may be different for pre-invasive patients versus invasive cervix cancer patients and may lead to important information when designing healthcare delivery systems. The purpose of this study is to compare differences in health insurance and health care access between patients with cervical dysplasia versus cervical carcinoma.

Methods/Materials

Following IRB approval, a retrospective study of all patients referred to the Division of Gynecologic Oncology at Westchester Medical Center, an academic tertiary care center, for both cervical dysplasia and cancer from January 2009 to January 2014 was performed. Referrals were received from a wide geographical range, with acceptance of all forms of insurance, from charity care to private insurance. Patients were excluded if they had another malignancy, insufficient records or follow up, or if patients did not complete care at Westchester Medical Center. Demographic and detailed clinical data were examined. Chi squared and t-tests were performed for analysis. Statistical tests were two-tailed with an alpha of 0.05 used for statistical significance.

Results

A total of 421 patients were reviewed, and 277 met study criteria. Mean age of the cancer group was 49.2 years (range 24-89), and for the dysplasia group 41.9 years (range 15-71), representing a statistically significant difference (P=0.001). Thirty-five percent of the cancer group was Hispanic, while 27% of the dysplasia group was Hispanic. Thirty-one percent of all patients initially presented with invasive carcinoma, while 69% had dysplasia. Race, English-speaking, and tobacco use were not significantly different between groups (Table 1).
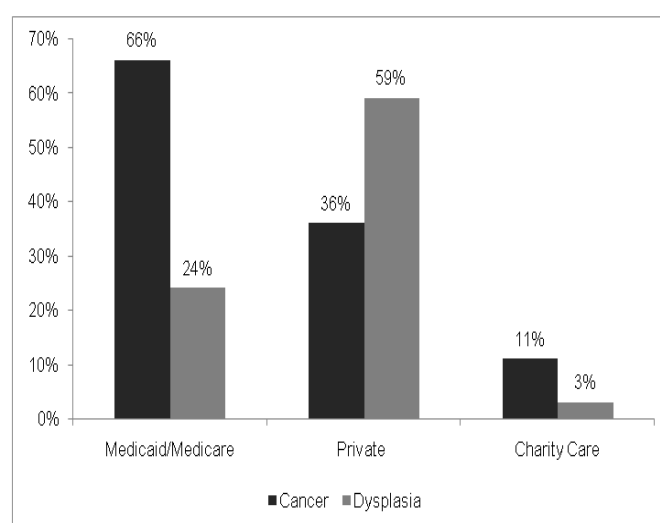

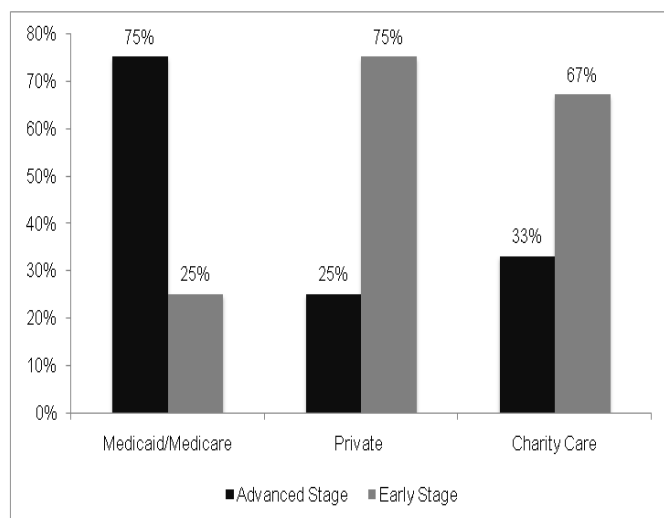
Figure 1: Insurance Distribution

Figure 2: Stages at Diagnosis

Table 1: It explains Risk Factor amongst different race, English-speaking, and tobacco use significantly different between groups

Risk Factor	Cancer	Dysplasia	P value
Age	49.2	41.9	P=0.001
Race			P=NS
White	12%	21%	
Black	18%	10%	
Hispanic	35%	27%	
Other	13%	9%	
Not stated	12%	33%	
Primary language			
English	59%	50%	P=NS
Mean distance to hospitals (miles)	39.3	37	P=NS
Tobacco use			
None	71%	80%	P=NS
GYN care in last 3 years			
Yes	59%	95%	P=0.001
Pap at diagnosis			P=0.001
HSIL	4%	37%	
AGC	6%	3%	
Invasion	2%	0.50%	
Insurance status			P=0.001
Private	49%	79%	
Medicaid/Medicare	40%	3%	
Charity Care	11%	0.50%	
HIV status			
Negative	100%	94%	P<0.5

Seventy percent of patients had private insurance, 23% had Medicaid/Medicare, and 7% were uninsured and received Charity care, provided by the institution. The insurance distribution was significant between groups (Figure 1), with 65.8% having Medicaid/Medicare and 23.5% having private insurance in the cancer group compared to 35.9% and 58.8%, respectively, in the dysplasia group (P=0.001).

Mean distance to the hospital for both groups was similar: 39.3 miles for cancer patients and 37 miles for dysplasia patients (P=0.374), and there was no difference in distance to access to care between government issued insurance and private insurance. As expected, differences in time since last gynecology visit were significant, with 96.3% of dysplasia patients having had care within the past 3 years compared to 63.3% of cancer patients not having had recent care (P=0.001). Furthermore, patients with higher-stage disease had less routine gynecologic care (P=0.001).

Patients with Medicaid/Medicare were more likely to be diagnosed with advanced-stage (stage II-IV) disease than those with private insurance (75% vs. 25%, P=0.003). Charity care patients had a 33% rate of advanced-staged disease, as seen in Figure 2.

Conclusions

Overall, access to any type of health insurance did not favor a diagnosis of cervical dysplasia versus carcinoma in our cohort of patients within New York State. Distance to a referral center did not make a significant difference in the diagnosis of invasive cancer and early stage versus late stage disease. Other factors that were not statistically significant between groups were race, including black race, tobacco use, and language barriers. However, access to a general gynecologist was significant in our cohort, which emphasizes the continued need for access to primary care for prevention and screening.

This study includes a high volume of Medicaid and Medicare patients (government-based insurance) with very few patients having no coverage (i.e. charity care). Despite having access to government-based coverage, the high incidence of cancer, especially advanced-staged cancer, was surprising. Our data supports the notion that government-based programs (both federal and state level) need to increase their coverage for routine and preventative services.

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However beyond insurance access, a healthcare education component is still lacking. Patients must not only understand the importance of screening but also actively seek out a primary care provider, whether it is a gynecologist or another women's healthcare provider. This factor was evident due to the lack of general access or visits to the gynecologist. Health literacy has been positively associated with adherence to cervical cancer screening [8]. Further efforts are needed to identify those patients with limited health literacy to enforce the importance of routine screening.

Strength of this study is that it includes a high volume of patients receiving care at a single institution. However, additional factors that could have been considered in our cohort include: mental illness, severe and significant co-morbidities, sexual orientation, and determination if a particular geographic focus within New York State had a higher incidence of carcinoma. Years of education are another factor that was unable to be extracted from our cohort which would be meaningful in determining if education level and dysplasia versus cancer diagnosis had any difference.

An important potential intervention to assess is the use of patient navigators. Navigators may aid in getting patients to general and specialized gynecologic care. Fang et al. (2007), found that patients who received assistance from patient navigation were more likely to receive routine PAP screening than patients who did not. Similar findings were found by Ell et al. (2002), when patient navigation services were used to assist in adherence to follow up appointments in patients with low grade and high grade intraepithelial lesions. They found that patients with health education, counseling and patient navigation services were more likely to adhere to at least one follow-up appointment [9,10].

In addition to improving government-based services, including access to primary and preventative services, it is imperative that vulnerable populations are identified with more wide spread education regarding cervical cancer risk factors to further improve screening and outcomes for cervical dysplasia and neoplasia.

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