Journal of Women's Health Care

ISSN: 2167-0420

Lee and Lee, J Women's Health Care 2017, 6:5
DOI: 10.4172/2167-0420.1000396

Review Article Open Access

The Association between the Screening Rates and the Incidence of Cervical Cancer in Korean Women

Eun-Sol Lee[1] **and Eun-Gyul Lee**[2]

[1]*Department of Obstetrics and Gynecology,Hankuk Academy of Foreign Studies, Yongin, Korea*

[2]*Department of Obstetrics and Gynecology,Kyunghwa Girls' High School, Gwangju, Korea*

***Corresponding author:** Eun-Sol Lee, Hankuk Academy of Foreign Studies, 54, Oedae-ro, Mohyeon-myeon, Cheoin-gu, Yongin-si, Gyeonggi-do 17035, Korea, Tel: 82-2-440-6140; E-mail: kgo02@naver.com

Received date: September 20, 2017; **Accepted date:** October 03, 2017; **Published date:** October 25, 2017

Abstract

Cervical cancer is the most common female genital malignancy in Korean women. The screening rate for cervical cancer has been steadily increasing from 40.3% in 2010 to 54.2% in 2015, and age-standardized incidence rate of cervical cancer decreased from 12.6 per 100,000 women in 2010 to 10.7 per 100,000 women in 2015. The screening rates for cervical cancer varied by geographic area and age group reflecting the importance of social and personal factors including health care accessibility, socio-economic status and education levels. Thus, screening programs for cervical cancer should be designed and directed under the control of a nationwide program for cancer control.

Keywords: Screening; Cervical cancer; Malignancy; Health care; Human papillomavirus

Introduction

Cervical cancer is the fourth most common malignant disease of women worldwide and the most common female genital malignancy in Korean women [1,2]. Because pre-invasive lesions caused by human papillomavirus infection progress into invasive cancers, cervical cancer could be screened and cured in early lesions by regular cervical cytology. Whereas the incidence of cervical cancer has decreased in many advanced countries with widespread use of routine cervical cytology for pre-invasive lesions, it is still reported in high incidence in many underdeveloped countries like Africa, Latin America, and south-eastern Asia [3]. In Korea, national cancer screening program for 5 common cancers (stomach, colon, liver, breast and cervix) has been launched in 1999. Of them, cervical cancer is screened with cervical cytology every 2 years.

Thus, this work aimed to evaluate the effect of screening rates on the incidence of cervical cancer in Korean women. In addition, the difference of screening rates was evaluated according to geographic areas and age group.

Methods

The Korea Central Cancer Registry (KCCR) was set up in 1980 and has collected data for cancer incidence and mortality rate, etc. And the national health insurance service (NHIS) has reported data associated with screening for 5 common cancers [4]. The statistical portal system via the Statistics Korea and NHIS website is open to public research and available for cancer statistics [5,6]. The data for cancer incidence and screening rates were available from 1999 and 2010, respectively.

Thus, this work reports the change of screening rates, the difference of screening rates based on geographic area and age group, and the change of cervical cancer incidence from 2010 to 2015 annually.

Results

The annual number of target population for cervical cancer screening has been steadily increasing from 6,422,573 in 2010 to 7,570,934 in 2015. And screening rate also showed similar trend from 40.3% in 2010 to 54.2% in 2015 (Table 1). During this period, the annual number of cervical cancer cases has been steadily declining from 3,977 in 2010 to 3,500 in 2015 (Figure 1).

And age-standardized incidence rate (ASR) also decreased from 12.6 per 100,000 women in 2010 to 10.7 per 100,000 women in 2015 (Figure 2). The screening rate increased in all age groups from 2010 to 2015. In 2015, the screening rate was relatively higher ranged from 59% to 63% in 40~69 years groups, but it was lower in 30~39 (49%) and 70~79 (43%) years groups, especially 12% in ≥ 80 years group (Table 2). And the screening rate in Seoul metropolitan area was higher than that in provincial areas (Table 3).

Year	Target population	Screened population	Screening rate (%)
2010	64,22,573	25,86,439	40.3
2011	73,34,187	32,63,849	44.5
2012	73,14,536	33,70,657	46.1
2013	72,98,134	35,54,493	48.7
2014	72,99,778	37,96,307	52
2015	75,70,934	41,06,787	54.2

Table 1: Annual screening rate from 2010 to 2015.

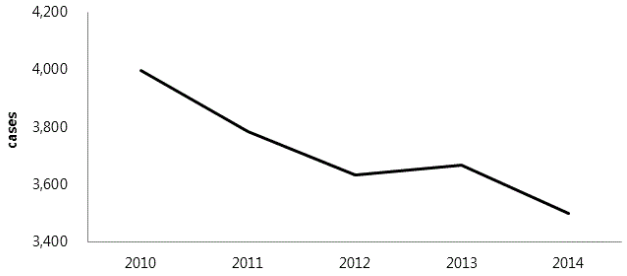

Figure 1: Total cases of cervical cancer from 2010 to 2014.

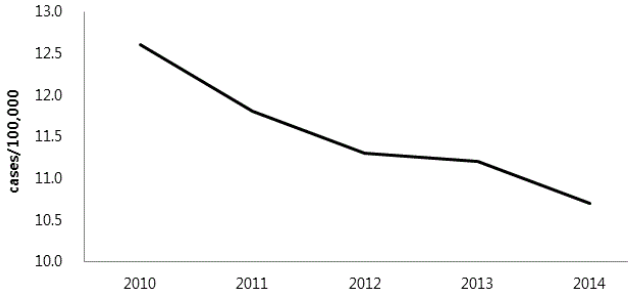

Figure 2: Age-standardized incidence rate of cervical cancer from 2010 to 2014.

Age (years)	2010	2011	2012	2013	2014	2015
30~39 (%)	30	45.6	30.7	38.5	44.1	48.6
40~49 (%)	43.8	45.8	52.5	53.2	56.4	58.9
50~59 (%)	49.3	51.3	58.4	57.9	59.8	61.3
60~69 (%)	47.6	51.3	59.5	60.1	62	63.1
70~79 (%)	25.9	29.4	36.8	38.1	41.4	42.7
≥ 80 (%)	6.1	6.7	9.5	10	11.6	12

Table 2: Annual screening rate according to age groups from 2010 to 2015.

Area	2010	2011	2012	2013	2014	2015
Seoul (%)	40.1	44.4	46.6	48	50.9	53.2
Kangwon (%)	38.1	42.7	44.1	46.6	50.5	51.9
Chonnam (%)	38.9	40.5	43.4	46.8	50	51.9
Kyungnam (%)	38.3	40.7	42.7	45.9	49.3	52.5

Table 3: Annual screening rate according to geographic areas from 2010 to 2015.

Discussion

The screening rate for cervical cancer has been steadily increasing from 2010 to 2015. During this period, the ASR as well as annual number of cervical cancer cases has been decreasing steadily. Thus, improved participation rate in national cancer screening program could contribute to the decrease of cervical cancer incidence. However, it is worthy of notice that screening rate in Korean women was significantly lower than that of more than 70% in UK and USA [7,8]. Thus, continuous efforts to improve the screening rate would be an important issue in controlling cervical cancer incidence in Korean women. Another important issue is whether the screening rate would be different according to age groups and geographic areas that reflect health care accessibility and socio-economic status. The screening rate in relatively young (≤ 39 years) and old (≥ 70 years) aged women was lower than that of middle (40~69 years) aged group.

And the screening rate in Seoul metropolitan area was higher than that in provincial areas. These results support previous reports that social infrastructures like health care accessibility, socioeconomic status and education levels could affect the attitude and participation for cancer screening and be important factors in cancer-related health unfairness [9,10]. In summary, the incidence of cervical cancer has been decreasing steadily with the increased screening rate for cervical cancer leading to early detection and proper management of pre-invasive lesions of the cervix. However, the screening rate for cervical cancer still varies by geographic area and age group reflecting the importance of social and personal factors including health care accessibility, socioeconomic status and education levels. Thus, improved delivery system for cancer screening should be developed under the control of national cancer screening program.

References

1. Torre LA, Bray F, Siegel RL, Ferlay J, Tieulent J, et al. (2015) Global cancer statistics, 2012. CA Cancer J Clin 65: 87-108.
2. Jung KW, Won YJ, Kong HJ (2015) Cancer statistics in Korea: incidence, mortality, survival, and prevalence in 2012. Cancer Res Treat 47: 127-141.
3. Parkin DM, Bray F, Ferlay J, Pisani P (2001) Estimating the world cancer burden: Globocan 2000. Int J Cancer 94: 153-156.
4. Shin HR, Won YJ, Jung KW, Kong HJ, Yim SH, et al. (2005) Nationwide cancer incidence in Korea, 1999~2001: First result using the national cancer incidence database. Cancer Res Treat 37: 325-331.
5. Statistics Korea. Korean Statistical Information Service. Daejeon: Statistics Korea (2015).
6. National Cancer Information Center. Goyang: National Cancer Center (2015).
7. http://webarchive.nationalarchives.gov.uk/20150505170920/http://www.cancerscreening.nhs.uk/cervical/publications/cervical-annual-review-2009.pdf
8. Cancer trends progress report: 2010/2011 update. Bethesda, MD: National Cancer Institute (2013).
9. Singh GK, Miller BA, Hankey BF, Edwards BK (2004) Persistent area socioeconomic disparities in U.S. incidence of cervical cancer, mortality, stage, and survival, 1975-2000. Cancer 101: 1051-1057.
10. Seol HJ, Ki KD, Lee JM (2014) Epidemiologic characteristics of cervical cancer in Korean women. J Gynecol Oncol 25: 70-74.