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Cervical Cancer

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Cervical Cancer

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Why should women care ...

Introduction

According to the latest statistics from the American Cancer Society, 11,995 women were diagnosed with cervical cancer in 2013 and 4,217 women died from this cancer (American Cancer Society, 2016). It is a disease that most often occurs in women over 30, and the Center for Disease Control (2016) estimates there are more than 13,000 new diagnoses each year. Scientists have been able to target the reason for this disease to a virus called the human papillomavirus. Unlike other reproductive cancers, cervical cancer is the only reproductive cancer that has screening available to detect the early stages of cellular change in a female's cervix that can lead to cancer; however, not all forms of cervical cancer can be detected through yearly PAP smear tests and HPV screening tests. Ongoing research about this disease, encouraging yearly screening and education about the signs and symptoms of cell change and cervical cancer are important in decreasing the deaths related to this cancer.

There are two main types of cervical cancer. The first one, which accounts for about 90% of diagnosed cervical cancers, is squamous cell carcinoma that covers the cervix (Peate & Jones, 2014, p. 51). The second type of cervical cancer is located in the gland cells of the endocervix that make the mucus and this is called cervical adenocarcinoma. According to the American Cancer Society (2017), doctors are seeing more cases of cervical adenocarcinoma in the past 20 to 30 years. Lastly, a less common form of cervical cancer has features of both squamous cell carcinomas and adenocarcinomas called adenosquamous carcinomas or mixed carcinomas.

Why should women care about cervical cancer? For one, it is one of the cancers, if caught early, that can be treated and cured. Secondly, because most forms of this cancer are caused by one or more strains of HPV, it is likely many women have already been exposed to the virus and do not realize it. Bogaards et. al (2010) cite in their findings "most women will contract at least 1 high-risk HPV infection during their lifetime" (p. 823). Some women will have strong enough immune systems that can clear the HPV infection and will never have to face a cancer diagnosis. Other women will hear those scary three words, "You have cancer" and their lives will change. Empowering women with the information on this potentially deadly virus, how it invades the female body, how it causes cellular change and what can be done to prevent it means a healthier female population worldwide and for generations to come.

Signs & Symptoms

- Vaginal discharge with unpleasant smell (Peate & Jones, 2014, p. 535)
- Bloody discharge between periods or after menopause (ACS, 2017)
- Bleeding after vaginal sex, bleeding or spotting between periods or after douching or pelvic exam (ACS, 2017)
- Bleeding after menopause strong indication of cervical cellular change (Walker & Hamilton, 2017, p. 6)
- Pain during intercourse (Walker & Hamilton, 2017, p. 6)

Pathophysiology

The cervix, which is also known as the neck of the womb (Peate & Jones, 2014, p. 534) is located just below the uterus. The cervical canal is a narrow channel that goes from the vagina to the inside of the uterus and normally stays closed except when a woman has her menses letting blood flow from the uterus. It also opens to allow sperm to travel inside and then has the ability to expand later on during labor and birth.

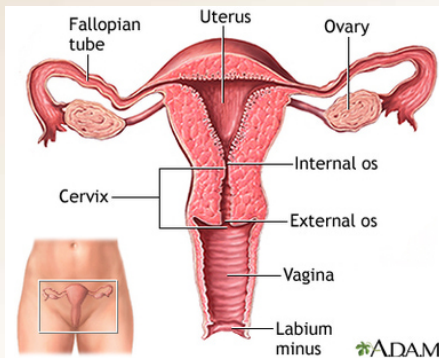
The cervix has two types of cells that are the focus of cervical cancer. First, the cervix is covered with skin-like cells or epithelial cells. Secondly, there are tiny glands that line the cervical canal which make mucus and these cells can be susceptible to change which can lead to cancer. Research has shown these changes come from the human papillomavirus or HPV.

The human papillomavirus is a group of more than 200 related viruses with more than 40 HPV types spread through direct sexual contact, skin to mucous infections, vaginal, anal and oral sex (National Cancer Institute, 2015). The sexually transmitted HPV's fall into two categories. Low-risk HPV's which are types 6 and 11 (National Cancer Institute, 2015), do not cause cancer but do cause genital warts. There are about a dozen or so high-risk HPV's that can cause cancer but research shows types 16 and 18 are responsible for most HPV-caused cancers (National Cancer Institute, 2015).

HPV causes cancer by infecting the epithelial cells which line the cervix. Once HPV enters the cells, the virus starts making proteins that interfere with cell function. The National Cancer Institute (2015) identifies these proteins as E6 and E7 that help the cell grow in an "uncontrolled manner and to avoid cell death" (para. 19). Choma and McKeever (2014) suggest differences in cell biology during various stages of a female's life can have an impact "on increasing exposure to the HPV virus" (p. 52). They say during puberty the cervical transformation zone, which is where the columnar cells meet the squamous cells, shift "outward onto the portio of the cervix" and the columnar epithelium gradually changes into squamous epithelium which ultimately supports HPV replication because the cells are replicating so fast (Choma & McKeever, 2014, p. 52).

Significance of Pathophysiology

Knowing certain strains of the human papillomavirus cause about 90% of all cervical cancers in women makes it easier for medical professionals to detect and treat this type of cancer. Research shows there are two main effective ways to detect the virus that can lead to treatment. The first is through cytology-based screening using either conventional cervical cytology or Pap smears or a liquid-based cytology that involves collecting cell samples from inside a woman's cervix and then prepping those cells on a slide, staining them, reading and reporting (Sherris, et al., 2009). The purpose of this testing is to detect precursors of cervical cancer on the epithelial tissue and to treat it before it progresses. Sherris, et al. (2009) also cite HPV DNA testing as another option which uses cervical or vaginal samples obtained with a brush instead of a swab. Their research shows this type of test is more effective in women over the age of 30 because this age group is at higher risk for precancerous lesions "because of the greater likelihood that a positive test result at that age signals a persistent HPV infection" leading to cancer (Sherris, et al., 2009, p. 149).



Nursing Implications

Cervical cancer was once one of the leading causes of cancer deaths among women in the United States, but according to the American Cancer Society (2017) those numbers have been cut in half because of the increased use of the Pap test. This screening allows advanced practitioners to find changes in the cervix before it develops into cancer or if it is already cancer, catch it at an early, curable stage.

Research has shown that education on the HPV virus and the need for early and continuous screening is important in protecting against and treating cervical cancer. The U.S. Preventive Task (2012) latest recommendation on screening for women breaks down the population into five different categories (see Appendix) for screening and prevention. These are the most current recommendations available but the U.S. Preventive Task force does say it is currently working on updating these guidelines.

Population	Recommendation	Grade
Women 21-65(Pap Smear) or 30-65 (in combo with HPV test)	Screen for cervical cancer in ages 21-65 with Pap smear every 3 years. Women 30-65 who want to lengthen screening interval, Pap Smear/HPV testing every 5 years	A
Women <30, HPV testing	Against screening for cervical cancer with HPV testing, alone or in combo with Pap Smear in women < 30	D
Women <21	Against screening for cervical cancer	D
Women >65, had adequate prior screening	Against screening for cervical cancer/not high risk	D
Women who have had a hysterectomy	Against screening for cervical cancer/no hx of high grade lesions/cervical cancer	D

A: USPSTF recommends this service, offer or provide this service D: USPSTF recommends against this service, discourage this use of this service. (USPSTF, 2012)

A second major implication for nursing includes the education and promotion of the HPV vaccine Gardasil. de Sanjose et al (2017) cite HPV causing "virtually all cervical cancer and its immediate precursors everywhere in the world" (p. 452) with HPV 16 and HPV 18 subtypes associated with those cancers. Current research shows that by vaccinating the female population "could reduce up to 90% of cervical cancer incidence worldwide with the existing vaccines" (de Sanjose et al., 2017, p. 452). There are three different prophylactic vaccines available with the latest one just released in May 2017. The vaccines and guidelines are below (de Sanjose, 2017, p. 453):

Bivalent (16/18)
Quadrivalent (6,11,16, 18)
Nine-Valent (6,11, 16, 18, 31, 33, 45, 52, 58)
Girls vaccinated 9yrs to 14 years – two doses
Girls vaccinated 15 years over – three doses
Boys can be vaccinated following same ages as girls

Conclusion

While cervical cancer is not the killer among women it used to be, it is still a concern among women ages 21 to 65. Most types of cervical cancer are caused by the HPV virus. With the proper screening and tests, APNs can detect changes in cervical cells before they become invasive cancer. Along with proper screening, patients need to be aware of the symptoms associated with this disease. Women must understand the importance of bringing these symptoms and any other changes they consider "out of the ordinary" to their APN's attention. Such vigilance can lead to catching the disease early, thus avoiding invasive treatment and or possibly death.

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