

Research Article

Cancer Diagnostics Procedure in Preventive Oncology Department

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The Department of Preventive Oncology is actively involved in various aspects of cancer control, prevention, and early detection. Oncology nurses play a crucial role in conducting preventive screenings for different types of cancers, including oral, cervical, breast, and others. This involvement aligns with the broader goals of health promotion and cancer prevention efforts within the field of oncology.

The systematic review protocol mentioned in the search results emphasizes the importance of promoting prevention and early detection of breast cancer, particularly in low- and middle-income countries (LMICs). The review aims to map existing evidence on hospital-based interventions like breast cancer education (BCE), breast self-examination (BSE), and clinical breast examination (CBE) services for healthy women without malignancy in LMICs [1][2][4]. Furthermore, the role of oncology nurses in health promotion, prevention, and screening is highlighted in the search results. Nurses are essential in evaluating individuals' responses to interventions, collecting relevant data, and contributing to cancer prevention actions through patient education and empowerment [2][4].

Screening refers to the process of testing a large, asymptomatic population for a particular condition or disease in order to identify those who have the condition, even if they do not show any symptoms [5][6][8]. The primary purpose of screening tests is to detect early disease or risk factors for disease in large numbers of apparently healthy individuals [6]. Screening tests are not diagnostic tests, but rather a way to identify individuals who may have a condition and require further testing for confirmation [6].

Diagnostic testing on the other hand, is performed on a patient who is symptomatic in order to determine what condition they have [5]. The purpose of a diagnostic test is to establish the presence (or absence) of disease as a basis for treatment decisions in symptomatic or screen positive individuals [6]. Diagnostic tests are used to examine possible root causes of particular symptoms or a specific health concern, such as cancer [7].

Symptoms & Warning Signs of Cancer [9]

- Change in bowel or bladder habits
- A sore that does not heal, especially in the mouth.
- Unusual bleeding and discharge per vagina
- Thickening or lump in the breast or elsewhere
- Indigestion or difficulty in swallowing
- Obvious change in wart or mole
- Nagging cough or hoarseness

Oral Cancer screening

Oral cancer screening is an examination performed by a preventive oncology department doctor to look for signs of cancer or precancerous conditions in mouth. The goal of oral cancer screening is to identify mouth cancer early,[10] when there is a greater chance for a cure. If any Leucoplakia or Erythroplakia, is finding that time doctors is doing oral brush cytology and oral biopsy. For further diagnostic test. Oral submucous fibrosis only doctors is teaching mouth stretching exercise to Patients.

Cervical Cancer Screening

Cervical cancer screening involves a series of tests and procedures aimed at detecting precancerous changes or early cancers before signs or symptoms of cancer occur. The primary goals of cancer screening are to reduce the number of people who die from the cancer, or completely eliminate deaths from the cancer, reduce the number of people who develop the cancer, identify people who may need more frequent screening or a different type of screening because they have a higher risk of hereditary syndromes, or family history [11].

Several tests and procedures are used to screen for cervical cancer

1. **Human Papillomavirus (HPV) Test:** This test is done on a sample of cells removed from the cervix. It is used to detect the strains of HPV most commonly linked to cervical cancer. HPV testing may be done by itself or combined with a Pap test [11].
2. **Pap Test:** Also known as a Pap smear, this test involves gathering a sample of cells from the cervix. It is often done at the same time as a bimanual pelvic exam as part of a gynecologic checkup. A Pap test may be combined with an HPV test [11].
3. **Visual Inspection with Acetic Acid (VIA):** VIA is a screening test that can be done with a few tools and the naked eye. During VIA, a dilution of white vinegar is applied to the cervix. The health care provider then looks for abnormalities on the cervix, which will turn white when exposed to vinegar. This screening test is very useful in places where access to medical care is limited [11].
4. **Visual Inspection of Lugol's iodine (VILI):** Visual inspection with Lugol's iodine (VILI) is a simple, low-cost method for cervical cancer screening that can be used in low-resource settings.

VILI involves applying Lugol's iodine solution to the cervix and visually inspecting it for iodine non-uptake areas, which appear as pale or yellowish-white areas, particularly in the transformation zone near the squamocolumnar junction [16]

Screening Recommendations

Different organizations have developed screening recommendations for cervical cancer based on age and health history. The American Society of Clinical Oncology (ASCO) recommends that all women receive at least one HPV test, at a minimum, to screen for cervical cancer in their lifetime, with general frequencies being between every 5 to 10 years. Specific recommendations may vary based on your age and the resources available in the area where you live, so it's important to talk with your doctor about how often you should be tested [1].

For women ages 25 to 65, ASCO recommends an HPV test once every 5 years. ASCO and the American Cancer Society (ACS) recommend that women 65 and older or women who have had a hysterectomy may stop screening. Decisions about screening for cervical cancer are becoming increasingly individualized, and sometimes, screening may differ from the recommendations discussed above due to a variety of factors, including your personal risk factors and your health history [11].

Importance of Regular Screening

Cervical cancer screening saves lives. Over the past 30 years in the United States, the number of cases of cervical cancer and deaths has decreased by one half. This is mainly the result of women getting regular cervical cancer screening [12]. Regular screening is crucial for early detection and prevention of cervical cancer. It's important to talk with your health care team about cervical cancer and decide on an appropriate screening schedule [11][12]

CBE (Clinical Breast Examination)

The exam typically involves three main components:

1. **Visual inspection:** The healthcare provider examines the breasts for any asymmetry, skin changes, dimpling, or nipple discharge [17][19].
2. **Palpation:** Using the pads of the fingers, the provider systematically feels the entire breast, underarm, and collarbone area for any lumps or abnormal texture. Benign lumps often feel smooth, round, and movable, while cancerous ones tend to be hard, irregularly shaped, and firmly attached [17].
3. **Lymph node examination:** The provider also checks the lymph nodes near the breast to see if they are enlarged [17][18].
4. **Squeezing the nipple** and breast may cause discharge that time Doctor is sending nipple discharged cytology for further investigation. Nipple discharge cytology is a diagnostic technique used to analyze cells obtained from nipple discharge in order to detect breast abnormalities, including cancer.[22]

Current guidelines recommend that women aged 25-39 get a clinical breast exam every 1-3 years, and those 40 and older get one annually [20]. The exam is usually performed as part of a regular gynecological check-up [20].

While breast self-exams are no longer routinely recommended, it is still important for women to be familiar with how their breasts normally look and feel so they can promptly report any changes to their healthcare provider [20].

If a suspicious lump or other abnormality is detected during a clinical exam, further testing such as a mammogram or ultrasound may be needed to make a diagnosis [20][21].

Prostate Cancer Screening

Prostate cancer screening typically involves two tests: a prostate-specific antigen (PSA) blood test and a digital rectal exam (DRE) [23][26].

The PSA test measures the level of PSA in the blood. PSA is a substance made by the prostate. Higher PSA levels may indicate prostate cancer, but other conditions can also cause elevated PSA [26].

During a DRE, the doctor inserts a gloved, lubricated finger into the rectum to feel the prostate for any abnormalities, such as lumps or hard areas that could be cancer [23][26]. The DRE can sometimes find cancers in men with normal PSA levels [25].

If the initial screening tests suggest a possible prostate cancer, further testing is needed to confirm the diagnosis. The only way to definitively diagnose prostate cancer is through a biopsy, where small samples of the prostate are removed and examined under a microscope [24][26].

Imaging tests, such as transrectal ultrasound (TRUS) and MRI, may be used to guide the biopsy needle into the correct areas of the prostate [27]. TRUS can also be used to measure the size of the prostate and help determine the PSA density [27].

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