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Cancer Screening Tests Helping Growth at an Early Stage

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Abstract

Cancer prevention is achieved through primary, secondary, and tertiary methods. Primary cancer prevention is achieved through two mechanisms: the promotion of health and wellness and reduction of risks known to contribute to cancer development.

Keywords: Prevention; Oncology; Diagnosed; Leukemia; People; New generation

Introduction

Primary prevention aims to reverse or inhibit the carcinogenic process through modifications in a patient's diet or environment or through pharmacologic mechanisms. Examples of primary prevention include smoking cessation interventions and chemoprophylaxis in women at high risk for breast cancer. Secondary cancer prevention includes screening and early detection [1]. In general, screening for cancer refers to checking for the presence of disease in populations at risk, and early Advanced Oncology Nursing Certification Review and Resource Manual detection is defined as testing for cancer when no symptoms are present. Secondary prevention seeks to detect cancer at the earliest possible stage, when the disease is most likely to be treated successfully. Tertiary cancer prevention is applied to those individuals who have already been diagnosed with a malignancy but are now candidates for screening and early detection of secondary malignancies [2]. Tobacco Use Smoking has long been established as a detriment to overall health. Earlier, studies pointed to smoking and its association with cancer. Research culminated with the U.S. Surgeon General's report, which concluded that smoking was the major cause of lung cancer and was associated with oral and laryngeal cancers in men. Since then, more than studies and subsequent reports of the Surgeon General have confirmed tobacco's detrimental health effects. More than 4,000 chemicals have been identified in tobacco products and tobacco smoke, which are identified as carcinogens by the International Agency for Research on Cancer. These carcinogens may induce genetic mutations and ultimately lead to cancer development. Tobacco use is considered a contributing or causative agent in a multitude of malignancies, including oral, laryngeal, lung, renal, bladder, cervical, gastric, and esophageal cancers, in addition to leukemia. Smoking is thought to cause lung cancers and is the leading cause of preventable cancer-related and non-cancer-related deaths in the United States. Lung cancer is estimated to be diagnosed in close to Americans, of which approximately will die, encompassing approximately all cancer deaths. Tobacco abuse and addiction is perhaps one of the greatest public health concerns of our time, particularly as far as cancer is concerned. Approximately adult Americans smoked equal to millions of people. Most adult smokers today began smoking in their youth. Experimentation with cigarette smoking often begins early in adolescence and peaks. Although the smoking rates in adults have been declining in the past decade, smoking prevalence in youths has risen dramatically. It is estimated that adolescents per day are smoking for the first time, and more than one-fourth of them will become regular users of tobacco. The percentage of high school students smoking declined, however, the rate of decline slowed, if not stalled. High school aged adolescents are current smokers. Healthy People includes reducing smoking prevalence among high school students as one of its objectives. These statistics suggest the emergence of a new generation of smokers unless interventions are implemented to cease tobacco use among adolescents. Given these startling statistics, primary prevention measures for tobacco-related cancers and tobacco deterrent programs must be aimed at children and adolescents [3]. Recent research shows that adolescents are three times more sensitive to tobacco advertising than adults and are more likely to be influenced to smoke by advertisements for cigarettes than by peer pressure. Tobacco prevention efforts include increased tobacco prices and taxes, public smoking restrictions, and anti-tobacco advertisements. Many studies have identified the aforementioned tobacco Cancer Prevention, Screening, and Early Detection control efforts as being successful in reducing adolescent smoking rates. One study estimated that through large-scale media campaigns and a mere increase in the price per pack of cigarettes, the prevalence of smoking among year olds could be reduced in the United States and lives could be saved. This study concluded that efforts to reduce adolescent smoking can affect adult health and mortality. Moreover, continued efforts are needed to focus on implementing state wide tobacco bans; states had done this as of 2006 [4]. Monies to promote tobacco control are also needed the tobacco industry spent more than billions on marketing, which is the amount spent on tobacco control efforts. Despite the known consequences of tobacco abuse on health and society and the proven benefits of smoking cessation, most clinicians fail to identify and counsel patients on this topic. Reasons for this include inability to quickly identify current tobacco users and a knowledge deficit about what treatments are effective, how they are delivered, and the associated side effects of treatment. Time constraints and lack of institutional support for tobacco cessation counselling also may contribute to the fact that only clinic visits with current smokers included smoking cessation counselling. Identification of current tobacco users can be achieved by asking all patients at every visit about their smoking status and whether they are interested in quitting. It also may be beneficial to document tobacco use as the fifth vital sign on the chart. It is estimated that current smokers want to quit, but more than a third of those are never asked about their smoking status or desire to quit. Even if patients have attempted smoking cessation in the past and have failed, several attempts at smoking cessation are common before

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long-term abstinence is achieved. Cancer risk assessment is a vital part of the oncology APN's role in cancer prevention and early detection [5]. To provide accurate counselling on cancer risk reduction strategies, cancer screening recommendations, and genetic testing, the oncology APN must first perform a comprehensive risk assessment. Cancer risk assessment is an individualized evaluation of a patient's risk for cancer based on a variety. Cancer Prevention, Screening, and Early Detection of both intrinsic and extrinsic factors and begins with a detailed history. This includes thorough past medical, obstetric, and surgical histories and documentation of recent age-appropriate screening tests, or lack thereof. Family history is a critical part of cancer risk assessment and includes at least a three-generation pedigree, particularly if a hereditary cancer syndrome is suspected. Medication history, dietary history, level of physical activity, environmental exposures, history of tobacco and alcohol use, and other lifestyle choices also are important factors to assess when determining cancer risk. A thorough physical examination concludes the cancer risk assessment and includes a breast, pelvic, and rectal examination. Some cancer risk assessment tools and models are available to help nurses to convey this risk to patients, such as the Gail model, Claus model, and BRCAPRO for breast cancer risk and the MMR pro model for hereditary colon cancer risk. Each of the tools has its strengths and weaknesses [6]. The Gail model is the most commonly used general breast cancer risk assessment tool and is used to estimate a woman's five-year risk and overall lifetime risk for breast cancer. Scores are calculated based on a variety of risk factors, including age, age at menarche, age at first live birth, race, number of first-degree relatives with breast cancer, and number of previous breast biopsies [7]. The score is based on a comparison to that of a woman of average risk and of the same race and age. However, this model fails to take into account the age at breast cancer diagnosis in affected family members, history of bilateral breast cancer, second-degree relatives affected with breast cancer, and history of ovarian cancer or lobular carcinoma in situ. Both the BRCAPRO and Claus models lack accurate risk assessment for minority women and factors other than family history, and BRCAPRO may fail to identify hereditary breast cancer syndromes that do not conform to BRCA mutations [8]. Some cancer risk assessment tools are available online, such as a lung cancer risk assessment tool through Memorial Sloan-Kettering Cancer Center, the Cancer Gene software from the University of Texas South western Medical Center for Breast Care, and the NCI's breast cancer risk assessment tool. The majority of cancers do not have reliable risk assessment tools, and those that do still have weaknesses. Therefore, these models are best used in conjunction with an individualized, comprehensive cancer risk assessment by the APN to best estimate and counsel patients on their overall cancer risk and on interventions to decrease that risk [9]. Given the disparities identified among the general public, oncology advanced practice nurses are in a unique position to educate their patients and the public regarding recommended cancer risk reduction and screening guidelines. The scope of practice for nurse practitioners includes an emphasis on health promotion and disease prevention. The Oncology Nursing Society recognizes screening to prevent illness and promote wellness as part of the role of the oncology APN. Therefore, cancer screening and prevention are clearly responsibilities of the oncology APN required to diagnose cancer at the earliest possible stage, if not prevent some cancers entirely [10]. Oncology specialty certification examinations include coverage of this topic.

Conclusion

In accordance with their state's scope of practice, nurse practice act, and requirements for educational preparation, oncology APNs must be able to assess, evaluate, and interpret cancer risk assessments and recommend appropriate strategies related to cancer prevention and screening.

Acknowledgement

None

Conflict of Interest

None

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