Background

Human Papillomavirus (HPV) is the leading cause of cervical cancer which has the highest lethality affecting women in the United States. As with any form of cancer, early detection and intervention is crucial for improving a patient’s prognosis. Consequently, efficient HPV screening has become a priceless tool in the efforts to detect cervical cancer at its earliest stages. Unlike the Papanicolaou (Pap) smear, HPV can help determine if a patient is at risk before cancerous cells even proliferate. It is important to note, however, that testing protocols have undergone several changes in recent years.

Current standards dictate that individuals of average risk between the ages of 30-65 years old should be screened every 3 years; individuals within ages of 21-29 years should be screened for the pap smear alone every 3 years; individuals who co-test with the HPV and pap test together should be screened every 5 years (Gavinski, K., & DiNardo, D., 2023). These standards, however, are subject to further updates due to an intricate history of several variables, including over-testing, false positive/negative test results, and analysis of widely accepted risk factors.

Methodology

Figure 1: Flow Diagram

Note: Through the methodology process, “n” represents the number of articles identified. 17 articles were identified (n=17) and established within a 5-year frame. The 17 articles were then screened through the information provided in their abstract resulting in (n=6), which then excluded articles that were deemed unfit for the research (n=11). Articles that were excluded were too specific to one demographic, discussed vaccinations and prevention methods, and did not follow the meta-narrative review format. Of the remaining articles, (n=6) were excluded after a full-text screening. This rationed the final selection of 6 articles chosen to be included in this study.

Strengths

- The significance of our meta-review highlights information and synthesis of sources within and outside the United States.
- Articles provided insights into international approaches of cervical screening protocols.
- Critical assessment of findings and trends within screening protocols historical context.
- The sources helped to uncover hidden connections and insights to the protocol in place.

Limitations

- Current CDC guidelines and our findings do not account for a younger, sexually active demographic at risk of contracting HPV
- At time of publication, the CDC has not yet updated its guidelines to reflect the latest findings
- Some cervical cancers are HPV negative, meaning HPV testing alone is not indicative of malignancy
- The data for our review is not exclusive to demographics in the United States

Significance of the Study

It is imperative to provide women with education of HPV and cervical cancer, so they understand why protocols for cervical cancer screenings are undergoing revision. Evidence has shown that primary HPV testing is more specific in accurately detecting precancerous cells in a timely manner in comparison to Pap smears.

Conclusion

A total of six methodical reviews of cervical cancer screenings were included in this meta-review. The consensus among them highlighted the emphasis on placing HPV testing in accordance with cervical cancer screenings. Challenges such as false positives, false negatives, extraneous testing, and overdiagnosis emphasized the need for complementary screening methods. Overdiagnosis and additional testing causes unnecessary stress for patients and may delay diagnosis of non-HPV related cervical cancers. Additionally, research has highlighted the importance of considering ethnicity and socioeconomic status in risk categorization and screening recommendations to ensure screening protocols are effective for all.

One of the purposes of HPV screening is to decrease the risk for women of reproductive age acquiring cervical cancer by early diagnosis of HPV which could eventually lead to high grade cervical intraepithelial neoplasia (CIN3+). It was also deduced that the workings of HPV testing along with Pap smears in a co-testing approach increases early detection of these precancerous cells compared to the Pap smear alone. A recommendation that would benefit those at risk of HPV and thus, cervical cancer, would be to develop a single screening tool that incorporates the cost effectiveness and availability of technology with the specificity of primary HPV testing. This would ultimately reduce the concern of over testing caused by co-testing and make the test more commercially available to everyone. Overall, HPV testing can offer long-term protection and detect cervical lesions efficiently.

References


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