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Evaluation of Cervix by Colposcopic Directed Histopathology: A Single Center Study

Jafrin Yasmin Choudhury[1*], Dr. Nahid Elora[2], Dr. Habiba Akther[3], Dr. Jakia Jahan Chowdhury[4], Dr. Umme Sayeda Bilkish[5], Dr. Mustofa Khalid Ahmed Jaigyrder[6]

[1]Assistant professor, Department of Gynecologist & Obstetrician, North East Medical College, Sylhet, Bangladesh
[2]Professor Head of the Department, Department of Gynecologist & Obstetrician, North East Medical College, Sylhet, Bangladesh
[3]Associate Professor, Department of Gynecologist & Obstetrician, North East Medical College, Sylhet, Bangladesh
[4]Associate Professor, Department of Gynecologist & Obstetrician, North East Medical College, Sylhet, Bangladesh
[5]Assistant Professor, Department of Gynecologist & Obstetrician, North East Medical College, Sylhet, Bangladesh
[6]Medical Officer, Sylhet MAG Osmani Medical College, Sylhet, Bangladesh

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***Corresponding author:** Jafrin Yasmin Choudhury
Assistant professor, Department of Gynecologist & Obstetrician, North East Medical College, Sylhet, Bangladesh

Abstract **Original Research Article**

Background: The most common malignancy among women worldwide is cervical cancer. With the right screening, it is a disease that can be prevented and cured. Colposcopy is a useful method for identifying and treating precancerous cervical lesions after primary screening. The most reliable method for identifying precancerous lesions is histopathology. ***Objectives:*** Purpose of This study aims to evaluate the cervix by colposcopic directed histopathology in a tertiary care hospital. ***Methods:*** This Cross-sectional study was conducted among 67 patients from North east medical college and Hospital, Sylhet. The study was done for the period of "January 2022 to June 2023 ". Patients having the following complaints: positive visual inspection of the cervix (VIA + ve) with 3-5% acetic acid, post-coital bleeding, postmenopausal bleeding, and intermenstrual bleeding were recruited for the study. Written informed consent was obtained from the participants. ***Results:*** Out of the total cases, 23 (34.33%) had squamous cell carcinoma, 14 (20.89%) had LSIL, 11 (16.42%) had adenocarcinoma, 9 (13.43%) had HSIL, and 7 (10.45%) had cervical intraepithelial neoplasia. Adenosquamous was 4.48% in 3 instances. ***Conclusion:*** The colposcopic guided histological investigation found squamous cell carcinoma to be the most common cervical neoplasia in this study. Afterwards, a large proportion of cases are attributed to LSIL, adenocarcinoma, HSIL, CIN, and adenosquamous carcinoma.

Keywords: Colposcopy, Histopathology, Cervical cancer, Biopsy, LSIL, HSIL, Squamous cell carcinoma, Adenocarcinoma.

INTRODUCTION

Cervical cancer most frequently affects women globally. In 2012, it was estimated that 5.3 million new cases were reported. It is reported to result in more than 2, 70,000 fatalities annually. More than 85% of these fatalities occur in less developed regions [1]. There were approximately 4,45,000 new cases in 2012 in the less developed areas. According to estimates, 11,956 new cases and 6,582 fatal cases of cervical cancer were reported among females in Bangladesh in 2012 [2].

The most prevalent reproductive cancer in women in Bangladesh is cervical cancer, and most patients present after it is too late [3]. Cervical cancer is the primary cause of death among women in Bangladesh due to cancer [4].

Each year, roughly 11,956 new cases of cervical cancer are identified, and 6,582 people die from the disease [5]. More than 80% of individuals with this highly preventable malignancy have clinically advanced and incurable stages when they are first detected [6]. The International Agency for Research on Cancer (IARC) anticipates an increase in cervical cancer fatalities over the next few decades [7]. By far, the most prevalent HPV-related disease is cervical cancer. 70% of precancerous cervical lesions and cervical cancer are caused by HPV 16 and 18 [8]. When precancerous lesions transform into actual cancer and infect surrounding tissues, symptoms appear. Common symptoms include heavy vaginal bleeding, post-coital bleeding, postmenopausal haemorrhage, intermenstrual bleeding, and atypical vaginal discharge that may be

blood tinged and foul-smelling. One of the main signs of cervical cancer is post-coital bleeding [9].

Because cervical cancer has a lengthy pre-invasive stage and it is curable. For women with cervical cancer, early detection and treatment are essential for lowering mortality rates.10 Fortunately, Cervical Cancer has a protracted premalignant stage that allows for early detection and treatment before it progresses to invasive Cervical Cancer. Population-based screening for cervical cancer with Pap tests or cytology is a crucial secondary preventative intervention that significantly improves the survival rate of those with the disease. In affluent nations with effective screening programs in place, early detection and treatment of cervical cancer can prevent up to 80% of cases. However, access to efficient, widespread screening is limited in underdeveloped nations, which contributes to an increase in the number of fatalities from cervical cancer [11].

According to the USPSTF's recommendation for cervical cancer screening, women between the ages of 21 and 65 should have a Papanicolaou smear performed every three years, or between the ages of 30 and 65 who wish to extend their screening interval should have a cytology and HPV test combined performed every five years [12].

Bangladesh's nationwide cervical cancer screening initiative was launched as a pilot project in 2004 and as a national program in 2005.3The government's screening test initiative in Bangladesh is called VIA. Women who have reached or passed the age of 30 get screening tests. Colposcopy had strong compliance, however only around 50% of patients with high-grade precancerous lesions received therapy. The practice of "see and treat" was hardly utilized, as was cryotherapy. One of the first nations to use VIA as the screening test for its national cervical cancer screening program is Bangladesh [13].

In order to participate in traditional cervical cancer screening and prevention programs, a woman must make regular visits even if the test is positive even if it is negative. The repeated visit-based screening schemes, however, have not been effective in lowering cancer rates in areas with limited resources. A novel one-visit strategy called "Screen and Treat" or "See and Treat" has been developed to improve the results. A "see and treat" approach reduces the chance of losing follow-up even while overtreatment may occur [14].

Studies have shown that "see and treat" is beneficial, particularly in low resource countries [15-17]. At demonstration locations in Peru, Uganda, and Vietnam, the government partners used VIA and cryotherapy for screening and treatment. Use of VIA and cryotherapy is a workable technique in these contexts for cervical cancer preventive services, according to evaluations in these three countries to study barriers and supporting factors [15].

Given that LSIL typically regress, the most crucial function of cervical cancer screening tests is to identify women who have high grade squamous intraepithelial lesions (HSIL) [18].

A "screen and treat" approach was suggested by a WHO expert group for patients with cervical intraepithelial lesions. The modalities for screening that are advised are VIA alone, HPV test just, HPV test then VIA, and HPV test/cytology. The suggested course of treatment is cryotherapy or LEEP. The use of cold knife conization (CKC) as a treatment in a screen-and-treat strategy was not advised by the expert panel [19].

In Bangladesh, there is no national recommendation favoring the "see and treat" or "screen and treat" methods. However, Nessa *et al*., 5 concluded that treatment should be provided via cryotherapy or LEEP immediately following colposcopy at the initial visit rather than waiting for confirmation via biopsy. Due to greater treatment compliance, this strategy would help more women, but it could also lead to overtreatment.

Objective

This study aims to evaluate the cervix by colposcopic-directed histopathology in a tertiary care hospital.

MATERIALS AND METHODS

Type of Study- Cross-sectional study

Place of Study- North east Medical College and hospital, Sylhet.

Period of study- The study was conducted from January 2022 to June 2023.

Sample size- 67 cases

Sampling method- Purposive sampling.

Inclusion criteria

- Patients ≥21 years
- PAP's Smear.
- Patients having Acetic acid (VIA+ve) were included
- Patients having post-coital bleeding, postmenopausal bleeding, and intermenstrual bleeding were recruited for the study.

Exclusion criteria

- Women having cervical growth
- Pregnant women were excluded from the study

- Patients attendants unwilling to be included the patient in the study

Data analysis

All data were edited and encoded into SPSS version 22.0. Descriptive statistics was used to express the results of the study. Continuous variables were expressed as mean ± SD. Categorical variables were expressed as frequency and percentage. A comparison of the mean between two groups was done by Student's t-test. Comparison of categorical data between groups was assessed by the Chi-Square Test (X^2- Test). The relationship between variables was assessed by the Chi-Square Test or Pearson's correlation test whenever needed. P values <0.05 were considered as significant. Diagnostic accuracy measures of sensitivity and specificity were calculated with 95% exact binomial confidence intervals (CIs). In the whole study, the significance level was set $p<0.05$ in all cases.

RESULTS

In our study, the highest number of cases (28.36%) were within the age range of 41-50 years. Only 3 patients (4.5%) were found to be between the ages of 21-30 and 71-80 years. 17 cases (25.37%) fell within the age range of 31-40 years, while 18 cases (26.86%) were aged between 51-60 years. Additionally, 7 cases (10.45%) were observed among patients aged 61-70 years.

Table 1: Age group distribution of the study subjects (n=67)

Age Group	Frequency	Percentage (%)
21-30 Years	3	4.48
31-40 Years	17	25.37
41-50 Years	19	28.36
51-60 Years	18	26.86
61-70 Years	7	10.45
71-80 Years	3	4.48

Figure 1 displays the economic status of the study cases. The majority of individuals, 27 (40.30%), resided in the lower middle socioeconomic group. A smaller proportion, 20 (29.85%), belonged to the upper-middle class. A minority, 13 (19.40%), were classified as low class, while a further 7 (10.45%) were part of the high class.

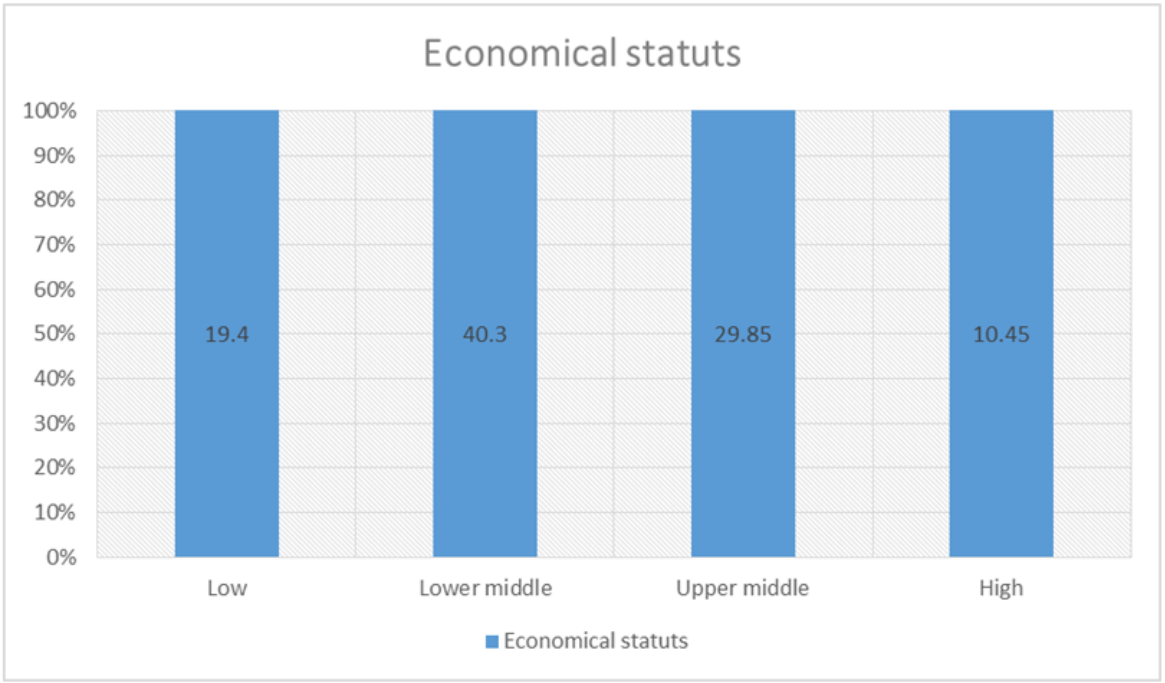

Figure 1: Economic status of the study cases (n=67)

Figure 2 displays the parity of our study cases. A majority of the participants, specifically 28 cases (41.79%), had a parity of 4 or more. A smaller proportion, 23 cases (34.33%), had a parity of 2-3. Lastly, 16 cases (23.88%) had a parity of 0-1.

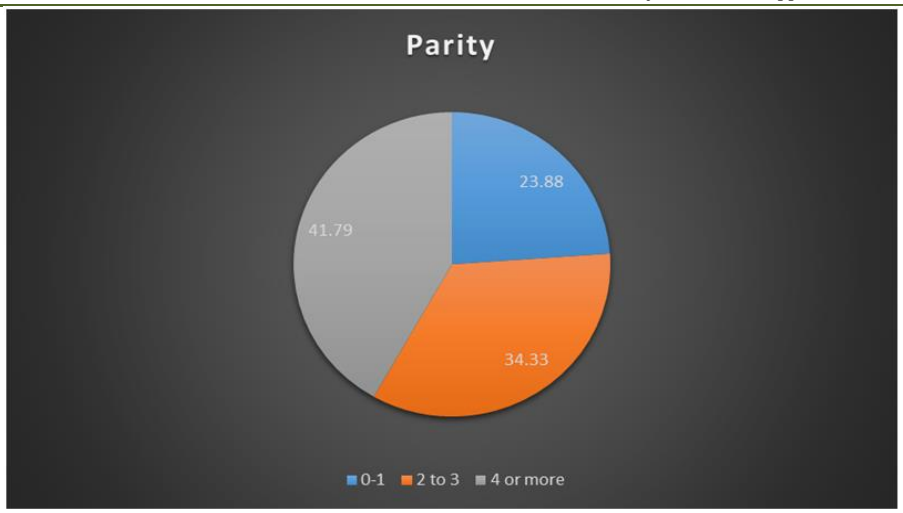

Figure 2: The study cases' parity, (n=67)

Table 2 lists commonly used contraception methods. In our study, a total of 67 cases were analyzed. Among them, 18 cases (26.87%) reported using oral contraceptive pills, while 16 cases (23.88%) did not use any contraceptive method. The withdrawal method was reported by 10 cases (14.93%), while 9 cases (13.44%) reported using condoms. Additionally, 8 cases (11.94%) reported using periodic abstinence. Only 2 cases (2.98%) reported using intrauterine devices (IUDs), injectable contraceptives, or female sterilization. It is worth noting that there was no reported history of male sterilization within their family.

Table 2: Common contraception method of the study cases' parity, (n=67)

Para	Frequency	Percentage (%)
No method	16	23.88
Pill	18	26.87
IUD	2	2.98
Injectable	2	2.98
Condom	9	13.44
Female sterilization	2	2.98
Male sterilization	0	0
Periodic abstinence	8	11.94
Withdrawal	10	14.93

Figure 3 presents various symptoms observed in the study. The majority of patients (91.04%) experienced abnormal vaginal bleeding, followed by pelvic pain in 83.58% of cases. Changes in menstruation were reported by 47.76% of patients, while dyspareunia was observed in 38.80% of cases.

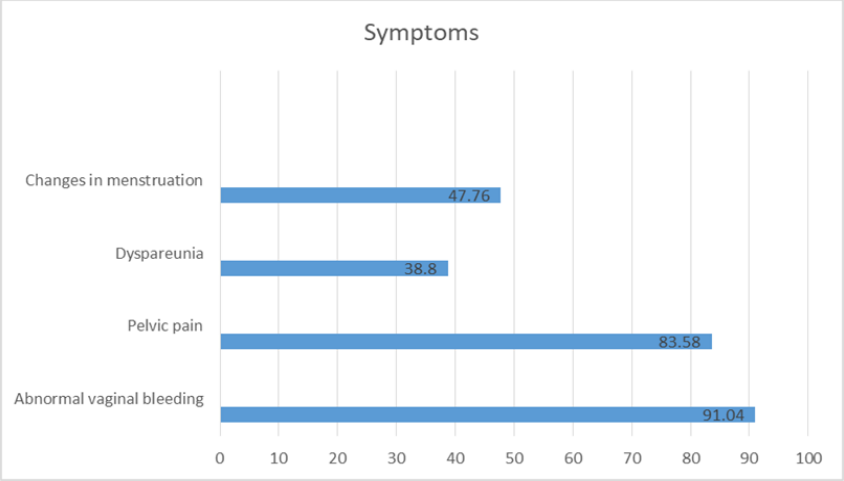

Table 3: Symptoms of the study subjects (n=67)

Table 3 presents the histological diagnosis obtained during colposcopy. Out of the total cases, 23 (34.33%) were diagnosed with squamous cell carcinoma, 14 (20.89%) had low-grade squamous intraepithelial lesions (LSIL), 11 cases (16.42%) were identified as adenocarcinoma, 9 cases (13.43%) were diagnosed with high-grade squamous intraepithelial lesions (HSIL), and 7 cases (10.45%) were found to have cervical intraepithelial neoplasia (CIN). 3 cases had adenosquamous, accounting for 4.48%.

Table 3: Distribution of participants by histopathological diagnosis (n=67)

Result	Frequency	Percentage (%)
CIN	7	10.45
LSIL	14	20.89
HSIL	9	13.43
Squamous	23	34.33
Adenocarcinoma	11	16.42
Adenosquamous	3	4.48

DISCUSSION

Cervical cancer is the fourth most typical malignancy in women overall.[1] The research cohort, which ranged in age from 20 to 60 years, had a mean age of 37.57 9.41 years in a study by Parvin *et al*., from 2016. The study's findings indicate that the study population was primarily between the ages of 41 and 50.

In our study, the highest number of cases (28.36%) were within the age range of 41-50 years. Only 3 patients (4.5%) were found to be between the ages of 21-30 and 71-80 years. 17 cases (25.37%) fell within the age range of 31-40 years, while 18 cases (26.86%) were aged between 51-60 years. Additionally, 7 cases (10.45%) were observed among patients aged 61-70 years.

The majority of cases, 27 (40.30%), resided in the lower middle socioeconomic group. A smaller proportion, 20 (29.85%), belonged to the upper-middle class. A minority, 13 (19.40%), were classified as low class, while a further 7 (10.45%) were part of the high class.

A majority of the participants, specifically 28 cases (41.79%), had a parity of 4 or more. A smaller proportion, 23 cases (34.33%), had a parity of 2-3. Lastly, 16 cases (23.88%) had a parity of 0-1.

In our study, a total of 67 cases were analyzed. Among them, 18 cases (26.87%) reported using oral contraceptive pills, while 16 cases (23.88%) did not use any contraceptive method. The withdrawal method was reported by 10 cases (14.93%), while 9 cases (13.44%) reported using condoms. Additionally, 8 cases (11.94%) reported using periodic abstinence. Only 2 cases (2.98%) reported using intrauterine devices (IUDs), injectable contraceptives, or female sterilization. It is worth noting that there was no reported history of male sterilization within their family.

The majority of patients (91.04%) experienced abnormal vaginal bleeding, followed by pelvic pain in 83.58% of cases. Changes in menstruation were reported by 47.76% of patients, while dyspareunia was observed in 38.80% of cases.

In a 2001 research by Rosenthal *et al*., 314 women who reported postcoital bleeding had 3% (n=9)

cases of cervical cancer, 5% (n=17) cases of CIN I, 12% (n=37) cases of CIN II-III, and the remainder had other diseases. The same study's authors noted that 0.6% of postcoital bleeding women with normal-appearing cervices and normal smears also had cervical cancer [10].

Out of the total cases, 23 (34.33%) were diagnosed with squamous cell carcinoma, 14 (20.89%) had low-grade squamous intraepithelial lesions (LSIL), 11 cases (16.42%) were identified as adenocarcinoma, 9 cases (13.43%) were diagnosed with high-grade squamous intraepithelial lesions (HSIL), and 7 cases (10.45%) were found to have cervical intraepithelial neoplasia (CIN). 3 cases had adenosquamous, accounting for 4.48%.

According to previous study results indicate that SCC is a valuable tumor marker in diagnosis, treatment monitoring and follow-up of patients with squamous cell carcinoma of the uterine cervix [21]. They have shwn show that 72% of all patients had initially increased serum SCC levels. Similar results were reported by Duk *et al*., (55.7%), Lozza *et al.*, (57%) and Abe *et al*., (87.7%) [22, 23].

CONCLUSION

The combination of colposcopy and cervical biopsy offers supplementary diagnostic advantages in detecting the presence and specific classification of cervical cancer.

This study found that squamous cell carcinoma is the most commonly observed cervical cancer identified through colposcopic guided histopathological examination. LSIL, adenocarcinoma, HSIL, CIN, and adenosquamous carcinoma are accountable for a significant percentage of cases.

REFERENCES

1. WHO, Fact Sheet, Human papillomavirus (HPV) and cervical cancer, June 2016. url: www.who.int/mediacentre/factsheets/fs380
2. GLOBOCAN. Population Fact Sheet - Bangladesh GLOBOCAN 2012: Estimated Cancer Incidence, Mortality and Prevalence Worldwide in 2012.
3. Ahmed, T., Ashrafunnessa, & Rahman, J. (2008). Development of a visual inspection programme for cervical cancer prevention in Bangladesh. *Reproductive health matters*, *16*(32), 78-85. DOI: 10.1016/S0968-8080(08)32419-7
4. Khatun, S., Akram Hussain, S. M., Chowdhury, S., Ferdous, J., Hossain, F., Begum, S. R., ... & Karim, A. F. (2012). Safety and immunogenicity profile of human papillomavirus-16/18 AS04 adjuvant cervical cancer vaccine: a randomized controlled trial in healthy adolescent girls of Bangladesh. *Japanese journal of clinical oncology*, *42*(1), 36-41. DOI: 10.1093/jjco/hyr173
5. World Health Organization: WHO. HPV vaccine introduced in Bangladesh. World Health Organization: WHO [Internet]. 2016 May 18 [cited 2023 Sep 8]; Available from: https://www.who.int/bangladesh/news/detail/18-05-2016-hpv-vaccine-introduced-in-bangladesh
6. Nessa, A., Hussain, M. A., Rahman, J. N., Rashid, M. H. U., Muwonge, R., & Sankaranarayanan, R. (2010). Screening for cervical neoplasia in Bangladesh using visual inspection with acetic acid. *International Journal of Gynecology & Obstetrics*, *111*(2), 115-118. DOI: 10.1016/j.ijgo.2010.06.004
7. Ferlay, J., Soerjomataram, I., Ervik, M., Dikshit, R., Eser, S., Mathers, C., ... & Bray, F. (2013). GLOBOCAN 2012 v1. 0, cancer incidence and mortality worldwide. *Iarc Cancerbase*, *11*. DOI: 10.1002/ijc.29210
8. Zur Hausen, H. (1977). Human papillomaviruses and their possible role in squamous cell carcinomas. *Current topics in microbiology and immunology*, 78, 1-30. DOI: 10.1007/978-3-642-66800-5_1
9. Rosenthal, A. N., Panoskaltsis, T., Smith, T., & Soutter, W. P. (2001). The frequency of significant pathology in women attending a general gynaecological service for postcoital bleeding. *BJOG: An International Journal of Obstetrics & Gynaecology*, *108*(1), 103-106. DOI: 10.1111/j.1471-0528.2001.00008.x
10. Šarenac, T., & Mikov, M. (2019). Cervical cancer, different treatments and importance of bile acids as therapeutic agents in this disease. *Frontiers in Pharmacology*, *10*, 484.
11. Shekhar, S., Sharma, C., Thakur, S., & Raina, N. (2013). Cervical cancer screening: knowledge, attitude and practices among nursing staff in a tertiary level teaching institution of rural India. *Asian Pacific Journal of Cancer Prevention*, *14*(6), 3641-3645.
12. Moyer, V. A., & US Preventive Services Task Force*. (2012). Screening for cervical cancer: US Preventive Services Task Force recommendation statement. *Annals of internal medicine*, *156*(12), 880-891. DOI:10.7326/0003-4819-156-12-201206190-00424
13. Basu, P., Nessa, A., Majid, M., Rahman, J. N., & Ahmed, T. (2010). Evaluation of the National Cervical Cancer Screening Programme of Bangladesh and the formulation of quality assurance guidelines. *BMJ Sexual & Reproductive Health*, *36*(3), 131-134. DOI: 10.1783/147118910791749218
14. Kuroki, L. M., Bergeron, L. M., Gao, F., Thaker, P. H., & Massad, L. S. (2016). See-and-treat loop electrosurgical excision procedure for high-grade

cervical cytology: Are we overtreating?. *Journal of lower genital tract disease*, *20*(3), 247-251. DOI: 10.1097/LGT.0000000000000230

15. Denny, L., Kuhn, L., De Souza, M., Pollack, A. E., Dupree, W., & Wright, T. C. (2005). Screen-and-treat approaches for cervical cancer prevention in low-resource settings: a randomized controlled trial. *Jama*, *294*(17), 2173-2181. DOI: 10.1001/jama.294.17.2173
16. Megevand, E., Van Wyk, W., Knight, B., & Blochb, B. (1996). Can cervical cancer be prevented by a see, screen, and treat program? A pilot study. *American journal of obstetrics and gynecology*, *174*(3), 923-928. DOI: 10.1016/S0002-9378(96)70327-7
17. Lynge, E. (2000). Advisory Committee on Cancer Prevention. Recommendations on cancer screening in the European Union. *Eur J Cancer*, *36*, 1473-1478.
18. World Health Organization. (2013). WHO guidelines for screening and treatment of precancerous lesions for cervical cancer prevention: supplemental material: GRADE evidence-to-recommendation tables and evidence profiles for each recommendation. World Health Organization. url: apps.who.int/iris/bitstream/handle/10665/ 96735/WHO_RHR_13.21eng.pdf
19. Boicea, A., Patrascu, A., Surlin, V., Iliescu, D., Schenker, M., & Chiutu, L. (2012). Correlations between colposcopy and histologic results from colposcopically directed biopsy in cervical precancerous lesions. *Rom J Morphol Embryol*, *53*(3 Suppl), 735-741. url:pdfs.semanticscholar.org/ccfb/ 3e9116ef88767390cee5c047ca83bbeb2130.pdf
20. Micke, O., Bruns, F., Schäfer, U., Prott, F. J., & Willich, N. (2005). The impact of squamous cell carcinoma (SCC) antigen in patients with advanced cancer of uterine cervix treated with (chemo-) radiotherapy. *Anticancer research*, *25*(3A), 1663-1666.
21. Duk, J. M., de Bruijn, H. W., Groenier, K. H., Hollema, H., ten Hoor, K. A., Krans, M., & Aalders, J. G. (1990). Cancer of the uterine cervix: sensitivity and specificity of serum squamous cell carcinoma antigen determinations. *Gynecologic oncology*, *39*(2), 186-194.
22. Lozza, L., Merola, M., Fontanelli, R., Stefanon, B., Seregni, E., Bombardieri, E., & De Palo, G. (1997). Cancer of the uterine cervix: clinical value of squamous cell carcinoma antigen (SCC) measurements. *Anticancer research*, *17*(1B), 525-529.
23. Abe, A., Nakano, T., Morita, S., & Oka, K. (1999). Clinical evaluation of serum and immunohistochemical expression of SCC and CA19-9 in radiation therapy for cervical cancer. *Anticancer research*, *19*(1B), 829-836.