Screening for cervical cancer as an organized or opportunistic challenge

Dr. Juliana LAJTHIA
Spitali Hygeia, Tiranë

Dr. shk. Esmeralda META
Spitali Hygeia, Tiranë

Prof. Dr. Majlinda IKONOMI
Spitali Hygeia, Tiranë

Abstract

Pap test is already part of the successful examinations in the early detection of cervical cancer. The objective of this 1-year retrospective study (2019-2020), is to assess the importance of periodic Pap tests, the distribution of squamous and glandular anomalies, as well as determining the predominant categories for each anomaly, in 4123 cases of Hygeia hospital, in Albania. The age group 60-69 years was with the most anomalies. 72.8% of women included in the study tested negative for intraepithelial lesion or malignancy. There was an increase in the positive percentage of Pap tests with epithelial cell abnormalities with increasing age group up to the age of 70 years (p <0.001). With epithelial cell abnormalities 97.7% of them were of squamous origin (ASC-US 86.2%) and 2.3% of them were of glandular origin.

The Pap test should be a routine test for all sexually active young women, for early precancerous detection of the cervix. It is a valid, inexpensive, uncomplicated, non-invasive screening test for the detection of premalignant and malignant lesions of the cervix[7]. The American Cancer Society recommends that all women should begin screening for cervical cancer 3 years after the onset of coitus. It is also recommended

that every 1-2 years, women who have passed the age of 30 and have had 3 consecutive normal pap results can be examined after 2 years[11,12]. Pap test cytology should be initiated in all women aged 21 years[11,13]

Key words: *Pap Smear, Young women, Hygeia hospital*

Introduction

Cervical cancer currently ranks second globally, among the types of cancer in women. Intraepithelial cervical neoplasms and cervical cancer remain significant health problems worldwide with high morbidity and mortality in the case of advanced lesions [1,2,11]. The Pap test is widely recognized as one of the most successful examinations in the early detection of cervical cancer. The Bethesda system is widely used worldwide and has almost completely replaced the Papanicolaou numeric system (a simple and very effective procedure for detecting premalignant cervical lesions) [3,4] for Pap test reporting. According to this system pre-invasive cervical lesions are classified into 2 groups: high-grade squamous intraepithelial lesions and low-grade squamous intraepithelial lesions5. Pap test is a cytological test designed to detect abnormal cervical cells from the transformed cervical area [6]. The cervical cytology screening process has reportedly reduced female mortality in the US and Canada by about 70% in the last 50 years. However today there are still women who lose their lives from cervical cancer[1,2]. For this reason it is necessary and have been designed and organized accurate screening programs by specialist doctors to increase the evidence and reduce the incidence of morbidity and mortality from this disease and in our country by IPH.

Objective

This is a retrospective study during the period 2019-2020, realized at Hygeia Hospital which had in its focus the Pap test, determining the importance of performing this examination periodically as a method of preventing the development of cervical cancer.

Material and Method

For a period of 1 year, 4123 Pap tests were evaluated on women of the age groups 19-70 years old, performed at Hygeia Hospital in Albania and the results of

cytopathological examination were collected. We analyzed the age group of women with and without anomalies; we assessed the distribution of anomalies of squamous origin and those of glandular origin for each age group; as well as we determined the age group with the highest percentage of anomalies. These data were studied to detect any correlation between the type of anomaly and the age group.

Our patients were divided into two categories: women whose expenses were covered by insurance companies and women who paid their own expenses. Pap test results were evaluated for each category of patients and abnormalities were determined for each age group. These data were studied to reveal any correlation between the type of anomaly and age group as well as to assess any possible relationship between the way Pap test costs are covered and their results.

The interpretation of the Pap test by the anatomopathologist was based on the Bethesda system. The study included only patients who had doctor-interpretable swabs without pronounced inflammation or with a small number of cells.

Results

In 4123 Pap tests analyzed, 3100 cases were negative for malignant intraepithelial lesion or neoplasia while 1023 cases were epithelial cell abnormalities.

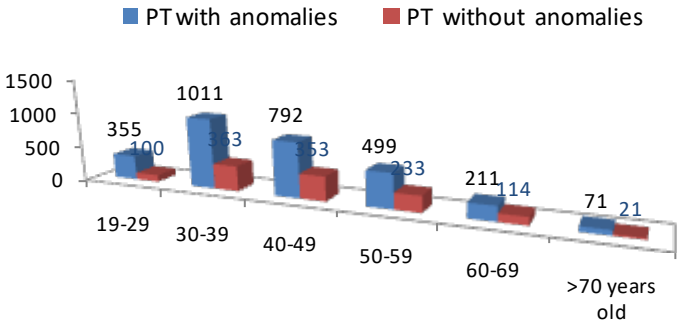
TABLE 1: Distribution of Pap tests with positive and negative results

Pap Test	Number	Percentage
No anomalies	3100	75.1%
With anomalies	1023	24.9%

The most common age group is 30-39 years old, which accounts for 33.3% of cases followed by 40-49 years old 27.8%; 50-59 years old - 17.8%, 19-29 years old - 11%. Women aged 60-69 years old and those aged 70 years old and over represented 7.9% and 2.2% of all women reported for age.

Pap test positivity increases significantly with age in examined women, from a positivity level of 22% in women aged 19-29 years old, 26.4% in 30-39 years old, 30.8% in 40-49 years old , 31.8% in 50-59 years old and reaching the peak in women aged 60-69 years old where the positivity of the Pap test is 35.1%, over 70 years old at 22.8%. These changes are statistically significant ($P < 0.001$).

GRAPH 1: Distribution of Pap test results in relation to age group



Women who resulted in epithelial cell abnormalities on Pap test were divided into two categories; those with squamous cell abnormalities and those with glandular cell abnormalities and their percentage was calculated. Squamous origin was evidenced in 97.7% of women who tested positive for Pap test and glandular origin in 2.3% of them.

TABLE 2: Distribution of squamous and glandular abnormalities

Pap test with anomalies	Number	Percentage
Squamous anomalies	1390	97.7
Glandular anomalies	33	2.3%

Categories distribution of squamous anomalies

In the group of women with squamous cell abnormalities 86.2% of them resulted in " atypical of undefined nature" ASC-US, 0.1% resulted in squamous cell carcinomas, 1.2% with HSIL, 8.1% with LSIL, 4.3% with the status "can not to exclude HSIL "and atypical squamous cells were detected in the remaining 0.1%.

TABLE 3: Distribution of categories of squamous anomalies

Squamous anomalies	Number	Percentage
ASC-US	1198	86.2
ASC-H	60	4.3
LSIL (CIN 1)	113	8.1
HSIL (CIN 2dhe CIN 3)	16	1.2
Squamous cell carcinoma	2	0.1

Distribution of glandular anomalies

Among women with abnormalities Pap test of glandular origin, 87.9% of them resulted in atypical endocervical glandular cells (AGC), endometrial, undetermined and the remaining 12.1% resulted in atypical glandular cells in favor of neoplasia.

TABLE 4. Distribution of anomalies of glandular origin

Glandular anomalies	Number	Percentage
Atypical cell	29	12.1%
Cell in favor of neoplasia	4	87.9%

Relationship between funding status and Pap test results

It is noticed that there is a significant difference in the results of the Pap test with anomalies between women who are affiliated with insurance companies and those who pay the costs of their examinations themselves.

Thus, among women who are affiliated with insurance companies, Pap test resulted with anomalies in 21.7% of cases while among women who are not affiliated with insurance companies Pap test resulted with anomalies in 28.7% of cases. This difference is statistically significant (P <0.001).

TABLE 5: Relationship between funding status and Pap test results

Variable	Total n (%)	Connection with insurance companies		Value of P **
		No n (%)	Yes n (%)	
Results of Pap Test No anomalies With anomalies	3800 (72.8) 1423 (27.2)	2939 (71.3) 1184 (28.7)	861 (78.3) 239 (21.7)	<0.001

Discussions

The Pap test represents an effective examination in the study of cervical epithelial cell abnormalities.

In our study, the age group with the highest screening was 30-39 years old, followed by 40-59 years old, probably related to the fact of information and

the highest level of awareness about cervical cancer and the possibility of its prevention[7], while age 29 is more discouraged for screening, such interventions are not acceptable, in contrast age over 70 has less information[11].

Pap test positivity followed an upward trend parallel to the increasing age group. HPV infection or other sexually transmitted infections are present shortly after sexual intercourse, the highest frequency of sexual intercourse and multipartnership at younger ages, the presence of CIN or precise lesions of cervical cancer are encountered for nearly a decade after the peak incidence of HPV [7.8] .This may explain why their percentage increases with age, as in our study.

From our study the squamous origin of epithelial abnormalities predominated by 97.7% compared to the glandular origin. Compared to studies in other countries in our study this incidence is much higher, as in Turkey study by the Turkish Cervical Cancer And Cervical Cytology Research Group (2009), 1.8%, in Saudi Arabia Jamal and Al-Maghrabi (2003) ranged from 1.7% to 29.9% 9, Eastern Nigeria 12.2% evidenced by Ajah et al. (2015) [10]

Among squamous epithelial abnormalities ASC-US resulted in a higher frequency of 86.2% and in abnormalities of glandular origin predominated those with atypical cells (AGC) 86.7%. In studies in different countries have encountered different prevalence in this finding.

We noticed that insured women, whose expenses are paid by private insurance companies, have significantly lower results with epithelial cell abnormalities compared to women who pay for their own examinations; perhaps this is indicative of a more regular and periodic check-up of women associated with insurance companies, compared to women who pay for their own examinations.

Recommendations

The Pap test should be a routine test for all sexually active young women, for early detection of cervical cancer. It is a valid, inexpensive, uncomplicated, non-invasive screening test for the detection of premalignant and malignant lesions of the cervix[7].

The American Cancer Society recommends that all women should begin screening for cervical cancer 3 years after the onset of coitus. It is also recommended that every 1-2 years, women who have passed the age of 30 and have had 3 can be examined consecutive normal pap results after 2 years[11,12]. Pap test cytology should be initiated in all women aged 21 years[11,13].

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References

Howlader N, Noone AM, Krapcho M, Miller D, Bishop K, Kosary CL, Yu M, Ruhl J, Tatalovich Z, Mariotto A, Lewis DR, Chen HS, Feuer EJ, Cronin KA (eds).

SEER Cancer Statistics Review, 1975-2014, National Cancer Institute. Bethesda, MD, https://seer.cancer.gov/csr/1975_2014/, based on November 2016 SEER data submission, posted to the SEER web site, April 2017.

Ranabhat SK, Shrestha R, Tiwari M. Analysis of abnormal epithelial lesions in cervical Pap smears in Mid-WesternNepal. Journal of Pathology of Nepal. 2011; 1(1):30-3.

Khattak ST, Naheed T, Akhtar S, Jamal T.Detection of abnormal cervical cytology by pap smears. Gomal Journal of MedicalSciences. 2004 Jun 1; 4(2).

Zamani N. Management of abnormal cervical cytology. J coll physc surg pak 1994; 4: 28-29.

Yousaf A, Yousaf NW. Review of cervical intra epithelial neoplasia (CIN) latest concepts of screening and management protocol. Pak J Obstet Gynaecol. 1992; 5:23-5.

A Ylli, K Filipi, L Shundi, A Fico: Albania National CervicalCancer Program , 2020.

Adepiti Clement Akinfolarin, Ajenifuja Kayode Olusegun,[1] Okunola Omoladun,[1] G. O. Omoniyi-Esan,[2] and Uche Onwundiegu[1]: Age and Pattern of Pap Smear Abnormalities: Implications for Cervical Cancer Control in a Developing Country. J Cytol. 2017 Oct-Dec; 34(4): 208–211. doi: 10.4103/JOC.JOC_199_15

Turkish Cervical Cancer and Cervical Cytology Research Group. Prevalence of Cervical cytological abnormalities in Turkey. Int J Gynaecol Obstet. 2009;106:206–9.

Ajah LO, Ezeonu PO, Ozonu NC, Iyoke CA, Nkwo PO, et al. A five year review of cervical cytology in Abakaliki, Nigeria. [Last accessed on 2016 Oct 15];Am J Cancer Prevention. 2015 5:23–6.

Dr Shailesh Kumar Pankaj1*, Dr Om Prakash DwivedyA Study on Pattern of Cervical Pap Smear Abnormalities with Respect to Age: JMSCR Vol 08, Issue 10, Page 226-229,October

Patel MM, Pandya AN, Modi J. Cervical Pap smear study and its utility in cancer screening, to specify the strategy for cervical cancer control. National Journal of Community Medicine. 2011; 2(1):49-51.

Ghazal-Aswad S, Gargash H, Badrinath P,Al Sharhan MA, Sidky I, Osman N, Chan NH. Cervical smear abnormalities in the United Arab Emirates. Acta cytologica. 2006 Jul 1; 50(1):41-7