ACTUAL TOPIC

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ANALYSIS OF PRECANCEROUS CERVICAL DISEASES IN WOMEN OF POST-PRODUCTIVE AGE IN THE REPUBLIC OF SAKHA (YAKUTIA)

Cytological studies of biomaterial from the cervix and cervical canal were analyzed for the incidence of precancerous diseases and cervical cancer in women of post-productive age. The incidence of CIN 1, CIN 2, CIN 3 and CC in CC and cervical canal smears is inversely dependent on the degree of dysplasia in examined women from 2016 to 2018. The incidence of CIN 1 had been increasing from 2016 to 2018, while CIN 2, CIN 3 and CC were decreasing rates. Analysis of the incidence characteristics of CIN 1, CIN 2, CIN 3 and CC depending on age revealed that women of 46-55 years had the highest incidence of CIN 1 and CIN 3. Women of 56 years and older are more frequent to have CIN 2 and CC.

Keywords: screening, oncocytology, diagnosis, dysplasia, cervical cancer.

Relevance: In modern society, the interest in the problems of health and social adaptation of postmenopausal women is growing steadily due to the increased number of women who have crossed the line of menopausal age. One of the complications of the physiologic course of postmenopause is the development of metabolic disorders of an involutional nature in the reproductive system, as in the cervix uteri, vagina and vulva. Such changes are caused by natural processes of aging, metabolic reactions at all levels, and microscopically expressed by changes in the cellular composition of the epithelial lining and connective tissue components of stroma [2]. The age is known to be a universal factor and the most important determinant of the malignant neoplasm risk [1]. Literature data indicate that for each cancer site has its own age peak, which falls on different periods of human life [3]. The pathogenesis basis of atrophic and dystrophic processes in perimenopause is estrogen deficiency. The lack of estrogens in this period leads to the loss of the main protective properties of the stratified squamous epithelium, glycogen-and pyroxin-binding functions. As a result, the number of lactobacilli is decreasing, up to complete disappearance, and, as a consequence, potentially pathogenic flora is intensively increasing. The change of vaginal biocenosis against the background of atrophic changes of the mucus barrier in the cervical and vaginal mucosa, as a rule, causes the development of nonspecific, often recurrent, slow inflammatory processes. It doesn't have a clinical effect of anti-inflammatory therapy and progressing with the increasing duration of postmenopause. The significant violation of blood supply to the vaginal walls and the exocervix is also a contributing factor. As a result of blood supply disorders, the amount of vaginal transudate sharply decreases, which is clinically appears by dryness and dyspareunia, and a tendency to microtrauma of the vaginal mucosa and vulva, which also, in turn, increases the appearance of infectious and inflammatory processes. There are gradual changes in the tissues of the vulva and vagina with the onset of menopause. The epithelium atrophies and becomes thinner, there may be signs of cytological dysplastic changes. Therefore, diagnosis and differential diagnosis of vagina and cervix uteri age-related atrophy, and dystrophic processes of the vulva should be aimed primarily at excluding, not only inflammatory changes caused by a specific infection process but also oncological disorder [2].

Purpose of the research: To study the dynamics of the incidence of precancerous diseases and cervical cancer in women of post-productive (perimenopausal and menopausal) age.

Materials and methods of research: The analysis of cytological studies of biomaterial from the cervix and cervical canal was carried out in 353 women aged 46 years and older who applied independently for various medical care in the period from 2016 to 2018 inclusive. Cytological diagnosis was carried out by the Romanovskiy-Gimza staining glasses method. Staining of the biomaterial and cytological diagnostics were carried out in the laboratory of pathomorphology, histology, and cytology based on the NEFU Medical Institute Clinic. Cytological diagnosis, degree of CIN and CC, was determined in accordance with the clinical and morphological classification of Bokhman (1976). The incidence of CIN1, CIN2, CIN3, CC in smears were calculated separately and expressed as a percentage of the total number of examined women.

Results and discussion. The total number of examined women was 46 women in 2016, 117 women in 2017 and 190 women in 2018, who had cervix dysplastic changes of varying severity. In terms of age groups were as follows: women of 46-55 years -192 (54.4%), women of 56 years and over - 161 (45.5%).

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According to the results of cytological analysis of the incidence of cervical dysplasia for the period 2016-2018, it can be seen that the highest frequency falls on CIN 1, which was registered in 221 women and amounted to 62.6% of the total number of examined women, CIN 2 was detected in 84 women (23.8%), CIN 3 was diagnosed in 37 women, which amounted to 10.5% of all cervical dysplasia in the examined group (Fig.1). Cervical cancer was detected in 11 cases and was 3.1%.

Depending on the year of the survey,
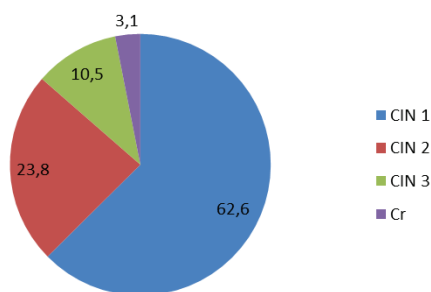
Pic. 1. The dysplasia occurrence of different degrees for the period 2016-2018

the analysis of CIN 1, CIN 2, CIN 3 and CC incidence for a three-year period showed an increase of CIN 1 with a decrease of CIN 2 and CIN 3 (pic.2). The incidence of CIN 1 in 2018 increased by 1.7 times compared to 2016, while CIN 2 did not show significant dynamics at the same time, and the incidence of CIN 3 decreased by 3.5 times. The frequency of CC detection decreased by 4.1 times in the examined smears. In general, such multi directionality of indicators shows positive dynamics in the development of dysplasia. Decreasing of CIN 2, CIN 3 and CC can be explained by constant monitoring of patients, constant
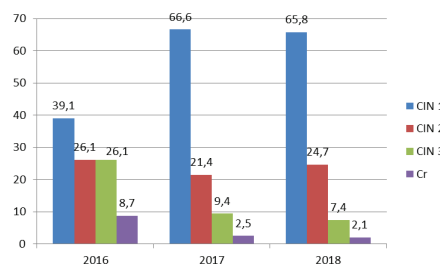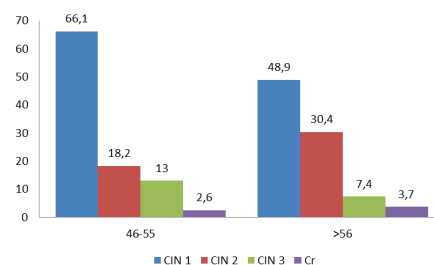
monitoring of the dysplasia development in the dynamics and effectiveness of the treatment. The growth of CIN1 can be explained by the fact that despite the treatment, colpitis often develops on the background of already existing age-related The cause of colpitis can be both specific infections and opportunistic flora. There are gradual changes in the tissues of the vulva and vagina with the onset of menopause. The epithelium atrophies and becomes thinner, there may be signs of cytological dysplastic changes.

When studying the incidence of cervical dysplasia depending on age, the analysis showed that the most frequently diagnosed cervical pathology in all age groups was CIN 1 (pic.3). The maximum frequency of occurrence of CIN 1 (66.1%) was observed in women aged 46-55 years. The highest incidence of CIN 2 (30.4%) was observed in the age group of 56 years and older. The highest incidence of CIN3 was observed in women aged 46-55 years and was 13%. The maximum incidence of CC was observed in the age group of 56 years and older – 6 cases (3.7%). It should be noted that the incidence of CC increases depending on the age of patients. This is confirmed by studies, according to which the progression of the severity of dysplasia goes for many decades [4].

There is an interesting fact, that CIN 3 in the group of women 56 years and older has a lower incidence than in the group 46-55 years. Given the age of the older women's group, CIN 3 should have a more incidence rate, as well as established rates of CIN 2 and CC. It can be explained that in women older than 56 years, the transition of moderate and severe dysplasia to CC is more rapid.

Conclusion. The incidence of CIN 1, CIN 2, CIN 3 and CC in CC and cervical canal smears is inversely depen-

dent on the degree of dysplasia in examined women from 2016 to 2018. The incidence of CIN 1 had been increasing from 2016 to 2018, while CIN 2, CIN 3 and CC were decreasing rates. Analysis of the incidence characteristics of CIN 1, CIN 2, CIN 3 and CC depending on age revealed that women of 46-55 years had the highest incidence of CIN 1 and CIN 3. Women of 56 years and older are more frequent to have CIN 2 and CC.

Our analysis of cytological material indicates the growth of gynecologic oncology disease rate with increasing age, and it is approved by the literature data. The increased risk and peak incidence of CC occur at the age of 56 years and older.

Prevention, early detection and adequate treatment of malignant tumors are the most important tasks of modern medicine. According to the results of the data analysis, it needs to improve the preventive examinations of women with a mandatory cytological examination, clinical examination, and treatment of patients with background diseases of the cervix uteri. This problem takes special research aimed at developing scientifically based solutions for the main problems associated with the CC findings on the initial stage.

Pic.2. Dynamics of dysplasia occurrence of different degrees for the period 2016-2018

Pic.3. Incidence of cervical dysplasia in women of post-productive age

References

1. Дикарева Л.В. Возрастные аспекты развития гормонозависимых опухолей матки в группах риска (клинико-статистическое исследование): *Дис. …канд.мед.наук.* 2003: 155. [Dikareva LV. Age-related aspects of the development of hormone-dependent uterine tumors in risk groups (clinical and statistical study): Dis. ... Candidate of Medical Science. 2003:155 (In Russ.).]
2. Мальцева Л.И. Гафарова Е.А., Гилязова Э.Э. Особенности заболеваний шейки матки, влагалища и вульвы у женщин в постменопаузе и возможности терапии. *Оржин.*2008;4:12-15 [Maltseva LI, Gafarova EA, Gilyazova EE. Features of diseases of the cervix, vagina and vulva in postmenopausal women and the possibility of therapy. *Orzhin.* 2008;412-15. (In Russ.).] https://www.gynecology.su/jour/article/view/213
3. Doyle P, Maconochie N, Beral V, Swerdlow AJ, Tan SL. Cancer incidence following treatment for intertility at a clinic in the UK. *Hum.Reprod.* 2002;17:2209-2213.
4. Richart RM, Barron BA. A follow-up study of patients with cervical dysplasia. *Amer.J. Obstet. Gynecol.*1969;105:386-393.