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Features of Invasive Cervical Cancers – Cervical Intraepithelial Neoplasia: Overview

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Abstract

In a review of the current literature materials on the problem of occurrence and development of cervical cancer. The classification, the various methods of early diagnosis and their value at preinvasive forms of cervical cancer - cervical intraepithelial neoplasia.

Keywords: *Cervical Cancer, Atypical Flat Epithelial Cells, Adenocarcinoma, Human Papillomavirus*

1. Introduction

Although modern medicine, including the diagnosis and treatment of oncological diseases, is developing in rapid steps, there is no tendency to reduce tumor diseases around the world. Cervical tumors are no exception. [1]. Cervical tumor (CT) is one of the most common tumor diseases among women and currently ranks second among oncological diseases. [2, 3, 4, 5, 6]. It is known that up to 400 thousand new cases of invasive tumors are registered in the world every year, and up to 200 thousand women are prematurely losing their lives due to this disease, in the Russian Federation these numbers are 12 thousand and 6 thousand women, respectively. [7]. Urmancheeva A.F. and Ulrich E.A. according to [7] quoted by the S, the median age of women with invasive cervical tumors is 45-55 years (18 to 80 years old), while the median age of those who died from this disease is 55-60 years. The prospect of the disease depends on its level, the total 5-year residence time after the development of the disease in Europe is 60%. Vesnina E.L. [8] cervical tumor (CT) in the group of women aged 15-29 among people with , the incidence rate claims to have shown a 100% result in the last 10 years, compared to 50% in the 30-45 age group. There has also been a significant increase in delayed forms of CT in diagnosis and treatment, such as a 34.2% comparative percentage of CT-induced women at Level III-IV in 1990, 37.1% in 1992, 38.8% in 1995, and 39.7% in 2003. Apparently, the tendency to grow in the last 13 years has been preserved. A literature review found that preinvasive forms of CT - servical intraepithelial neoplasia (cervical intraepithelial neoplasia - CIN) - are observed before invasive form of Bbo. This phrase was introduced into practice by Richart in 1968 and proposed to be divided into 3 degrees [8, 9]:

- light level - CIN1(light epithelial dysplasia)

- intermediate level - CIN1 (intermediate epithelial dysplasia)

- heavy level - CIN1 (heavy epithelial dysplasia)

Only then has the development of a preinvasive tumor (CIS - carcinoma in citu) been shown [8, 9]. In the 80s of the last XX century, different classifications (classifications) of servical intraepithelial neoplasia were used in different countries, and this led to the fact that diagnosis and treatment in different clinics around the world did not coincide in results [8, 10]. In recent years, evaluation of atypical epithelial cells for the purpose of transport is becoming more common under the Terminology Bethesda Systems (TBS) system proposed in 1988 [11]. Under this system, 2 categories of intraepithelial injury are distinguished:

- low level LSIL (Low-grade sguamous intraepithelial lesion), this level corresponds to CIN1;

- high level HSIL (High-grade sguamous intraepithelial lesion), this level corresponds to CIN2-3.

Also "atypical flat epithelial cells of unknown origin" signaling - ASCUS " (atypical sguamous celli of undetermined significance - ASCUS) and atypical glandular cells of undetermined significance - ACUS [7].

The practice of using the cited case in disease diagnosis has shown that this classification is not ideal and is not free from disadvantages, since errors in differential diagnosis of HSIL and LSIL were in most cases very numerous. In view of these problems, the diagnosis, observation of patient women based solely on cytological data has led to negative results and a negative prospect of CIN delay. Ayhan A. et al. [12] according to the data given, about 10 million women with CIN3/CIS are identified in the world every year, that is, this figure is up to 20 times more than the diagnosis made as an invasive tumor. Cin has been found in 1% of pregnancies as a stage of CT in women, with anomalous rates in surtma found in 5% of examined women. Urmancheeva A.F. [13] a clinical-laboratory examination of a total of 4230 pregnant women yielded data on the detection of CIN3 in 22 pregnancies from a Class III-IV rub on Papanykolau, with an extended diagnosis confirming cin 3 in 6 of them, one woman was diagnosed with a microinvasive tumor. Currently, the detection of CIN during pregnancy does not raise doubts, the results of the cited scientific work [14, 15] found that the frequency of detection of CIN3 in pregnant women was 3 out of every 10 thousand tested. The diagnosis of CIN as an early diagnosis of CT has always been the focus of researchers, since not only treatment, but also the prospect of the course of the disease, has been linked to a clear and correct diagnosis [16]. The CT, which is a method of political diagnosis, has long been considered cytological studies recognized by experts of the World Health Organization (WHO) [17], but in recent years new methods for determining CIN have been proposed and are being introduced into clinical practice. As you know, one of the simplest methods of cin diagnosis is colposcopy [18, 19, 20, 21]. In this method, patients are diagnosed with visual leakage point heights, a wide spread vascular network [22]. In addition, against the background of the appearance of veins expressed in pregnant people, white spots of the metaplased epithelium are detected, there is a separation of mucus from the enlarged pores of the glands that function in the body [7].

Avtandilov G.T. and co-authors [23] have also proposed ploidometric diagnosis on cytological drugs. According to some authors, increased vascularization, edema, lymphocytic infiltration, desiduo-qualitative reaction of stroma are observed in histological examination. The displacement of the squamous-prismatic angle of the epithelium towards the ectocervix is frequently detected. Multiple squamous epithelium can often be seen hyperplasically, with impaired cell differentiation, additional blood capillaries can be detected in the epithelium. It is characteristic of the migration of enlarged glands to the vaginal part of the cervix, metaplasia in the prismatic epithelium, increased secretion processes. A cytological examination found that cells had active cytolysis and large amounts of "naked nuclei" [7, 22]. Physiological changes in gestational time, indicated by the authors above, are regressed 2-4 months after delivery and enter CIN hyperdiagnostics, leading to a "false" positive result. This leads not only to additional treatment procedures, but also to mental injury of the patient, but, in combination, CIN hypodiagnostics is also dangerous. Given these data, diagnosis injection into CIN using only Cytological and colposcopic examinations can lead to unsatisfactory results on the prospect of diagnosis and disease [20]. For this reason, the development and implementation of convincing diagnostic methods of identifying CIN in pregnant and non-pregnant women has not yet lost its relevance. Given these data, diagnostic injection into CIN using only cytological and colposcopic examinations can lead to unsatisfactory results on the prospect of diagnostics and disease [20]. For this reason, the development and implementation of convincing diagnostic methods of identifying CIN in pregnant and non-pregnant women has not yet lost its relevance.

One of the proposed new and future methods in medical practice is computational morphometry of cytological diagnosis. When morphological indicators of women with cervical dysplasia are studied, it is found that the nuclear area is up to 695 mkm2, and the cell area is enlarged to 3881 mkm2. The nuclear-cytoplasmic ratio becomes 2 times larger. In the unchanged epithelial cell in the normal state, however, the nuclear area is 212 mkm2, and the cell area is 442 to 3628 mkm2. As the pathological process becomes more expressed, the heterogeneity of the cell population increases [24, 25]. One of the modern methods proposed for the purpose of diagnosis is the immunogystochemical method used in differential transport of endocervical glandular epithelium, servical duct and endometrial adenocarsenoma [26] as well as CIN [27, 28] safe, tumor - acquired lesions. There is also data on studies using the immunogystochemical method of detecting monoclonal antibodies (RSNA), c-erbB-2 oncoprotein, cyclin D1 and R53 mutant protein in relation to the nucleus protein of proliferating cells, studying the aggressiveness and virulence of non-cervical flat cell tumors. Evidence of biological activity of tumor cells is believed to have a positive response of antibodies to c-erbB-2 and r53 oncoprotein in much of the observations [26, 29]. Also, one of the proposed methods is to carry out a test on the diagnosis of HPV (human papilloma virus - human papilloma virus), since the transmission of HPV is a mandatory condition for the development and development of CIN and CT. [17, 30, 31]. Currently, the following 2 methods are mainly used to detect HPV infection in women: polymerase chain reaction (PZR) and hybridization method [32, 33]. It is important to note that in a Real-time pzr Examiner, HPV is an important method for determining the status of DNA [34, 35]. Detection of HPV types, viral loading, and viral DNA status is a method that determines the prospect of neoplastic progression [32, 36]. Vesnina E.L. [8] according to the data cited HPV screening in patients with changes in cytological lubricants allows the separation of a group with high risk HPV infection and a high probability of detection of CIN2,3. It is known that the E6 and E7 genes of HPV activate cellular telomerase with very high levels of HSIL da. The expression of telomerase RNA and viral oncogenes is inextricably linked with the aggravation of the pathological process, the conducted correlation analysis also confirms this.

In this regard, telomerase activity testing can also be used as a marker in clinical practice in CIN monitoring and perspective determination [32, 37]. Sergeeva N.S. and co-authors [38] have proposed the use of the SCC serological marker for Tumor Association, for example, in the treatment and monitoring of patients with CT. Belokriniskaya T.E. and co-authors [19], as well as Podistov yu.I. and according to the data cited by co - authors [20], the high expression of the R53 suppressor-protein in CIN1 indicates its protective function in the process of carcinogenesis, is one of the most important criteria in assessing the degree of lesion, disease development. Alonio L.V. et al. [39] as a result of studies conducted in CIN2,3, The examined patient also found mutations in women known as Ha-ras, which, according to the authors, can be considered as a marker of the rapid development (progression) of the tumor formation process in the body. A review of the literature found that CT is one of the common diseases. Taking into account the formation of CIN before CT, the early diagnosis of this condition is an urgent problem of Clinical Medicine. It is worth noting that diagnosis methods based on immune mechanisms are widely distributed in CIN diagnosis along with cytological, colposcopic methods. Therefore, the diagnosis of CIN provides the diagnosis of CT, laying the groundwork for the prevention of its development and providing a positive perspective.

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