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**УДК 618.146-007.17»2023»**

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## COMPREHENSIVE ANALYSIS OF CERVICAL DYSPLASIAS: INSIGHTS FROM A RETROSPECTIVE STUDY OF 106 CASES DIAGNOSED IN 2023

***Introduction***

Cervical dysplasia, also known as cervical intraepithelial neoplasia, is a condition in which abnormal cells grow on the epithelial tissue of the cervix (the opening to the uterus attached to the top portion of the vagina). It is commonly considered a precancerous condition that leads to cervical cancer; however, with early detection and treatment, it can be prevented from becoming cancerous [1]. Based on how much epithelial tissue in the cervix has abnormal cells, they are classified as mild, moderate, and severe, otherwise known as CIN1 (abnormal cells affecting one-third of epithelium thickness), CIN2 (abnormal cells affecting one-third to two-thirds of epithelium), and CIN3 (abnormal cells affecting more than two-thirds of epithelium) [1]. Cervical dysplasia is more commonly affected in sexually active individuals (particularly from ages 20-35), AFAB (assigned female at birth) individuals, anyone with a cervix, and HPV patients. HPV patients are more prone to having severe dysplasia that eventually results in cervical cancer, as HPV is linked with cervical and uterine-related cancers. Hence, HPV is considered one of the primary causes of cervical dysplasia. Morphologically, HPV infection of cervical epithelial cells is characterized by the appearance of perinuclear, enlarged, and irregular nuclei showing evidence of mitosis, thus increasing the portion of cervical epithelium exhibiting dysplastic cells determining the grade of dysplasia (CIN1 – rare, CIN2 and CIN3 – more significant). Cervical dysplasia becomes cervical cancer when the abnormal cells invade the basement membrane [1].

Cervical cancer is the fourth most common cancer in women globally, with an estimated 604,000 cases and 342,000 deaths as of 2020 [2]. People who have severe cervical dysplasia,

a high risk of HPV, and whose condition goes untreated can develop cervical cancer. This is why it is considered very important for early diagnosis and prompt treatment to cure most cases of cervical dysplasia. Consultation with a doctor to discuss the HPV vaccine criteria and whether vaccination is recommended is also crucial [4]. Therefore, the main goal of this article is to raise awareness regarding cervical dysplasia, its close relation to HPV infection, its dangerous end result of cervical cancer which may lead to death, and the variety of harmless diagnostic and treatment options that healthcare has to offer to take precautions before cervical dysplasia becomes so severe that hysterectomy or surgery is needed to fully remove the cervix. For example, Pap test (common), colposcopy, biopsy, and HPV test are some such diagnostic methods, while cryosurgery (freezing abnormal cervical tissue), loop electrosurgical excision procedure (LEEP, burning abnormal cells with an electrical looped wire), laser treatment, etc., are such treatment options [3].

Many people in society are unaware that cervical cancer develops as a result of the progression of an infection that may have been ignored or left untreated. This lack of awareness may stem from the misconception that it is not a significant threat or that seeking treatment for it is shameful due to its location. Consequently, the incidence of cervical cancer, the fourth most common cancer in women globally, is on the rise, with estimates ranging from 660,000 cases to 350,000 deaths as of 2022 [2, 4].

Cervical dysplasia can resolve on its own since its abnormal cells are not invasive. However, there is a significant risk that they may become cancerous. It is highly recommended to undergo a Pap test primarily to detect any abnormal changes in the cells of the cervix, followed by a cervical biopsy report for further clarification. Accordingly, cervical dysplasia is graded as follows: CIN1 (mild) – abnormal cells on the surface of the cervix, noncancerous, categorized as low-grade squamous intraepithelial lesion (LSIL); CIN2 (moderate) – abnormal cells, noncancerous, without treatment, could develop into cancer and spread to neighboring tissues; CIN3 (severe) – severely abnormal cells, noncancerous, without treatment, could develop into cancer, also known as high-grade squamous intraepithelial lesion (HSIL) [5]. This grading system also reflects the progression of cervical cancer (Figure 1).

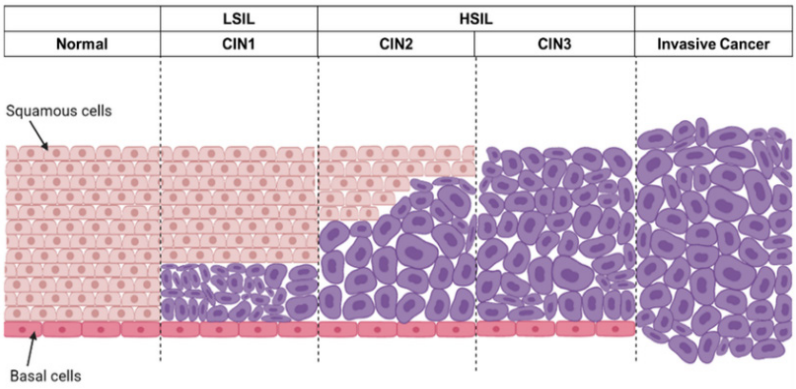


***Figure 1 – An overview of the progression of cervical cancer [6]***

Cervical dysplasia is a precancerous condition of the cervix that, if left untreated, takes ten years or more to develop into cervical cancer. However, with weakened immunity, it can progress into cervical cancer within five to ten years [5].

***Goal***

The objective of this article is to provide a comprehensive exploration of the morphological characteristics of cervical dysplasia and investigate the age distribution at which it is diagnosed.

***Material and methods of the research***

A retrospective analysis of medical records, histological reports, and microscopic slides of 109 patients diagnosed with cervical dysplasia in 2023 was conducted. Data processing and statistical analysis were performed using Microsoft Office Excel 2013.

***The results of the research and their discussion***

Based on the age distribution of our patient population, it was found that low-grade squamous intraepithelial lesion (LSIL) cases, which comprised the majority, were distributed across a wide age range of 20–70. Among these cases, there were 21 patients in their early 30s, 10 patients in their late 30s, 13 in their early 20s, 10 in their late 20s, 13 in their early 40s, 2 in their late 40s, 3 in their early 50s, 1 in their late 50s, 8 in their early 60s, and 1 patient aged 70 (a rare case). On the other hand, high-grade squamous intraepithelial lesion (HSIL) cases, totaling 26, were distributed across an age range of 19-81, with a majority of 9 patients in their late 30s, 3 in their early 30s, 5 in their early 20s, 1 in their late 20s, 5 in their early 40s, 3 in ages above 40, and 1 patient in their late teenage years (19, which is rare).

Therefore, it can be concluded that the majority of patients diagnosed with both degrees of cervical dysplasia, and hence at higher risk of developing cervical cancer, fall within the age range of their 30s. The results also revealed varying degrees of cervical dysplasias, with LSIL being more prevalent (83 cases, 76.14%) compared to HSIL (26 cases, 23.85%). LSIL cases predominantly exhibited isolated koilocytosis (12 cases) and koilocytosis combined with cervical intraepithelial neoplasia 1 (CIN 1) (18 cases), while HSIL cases were mainly associated with isolated CIN 2 (8 cases) and CIN2+koilocytosis (9 cases). Isolated CIN 1 (53 cases) and isolated CIN3 (3 cases) were also identified among LSIL and HSIL cases, respectively. These findings provide valuable insights into the prevalence and distribution of cervical dysplasias within our patient population.

Table 1 – Total number and percentage of cases of various types of cervical dysplasia based on histological research

| | | | |
|---|---|---|---|
| LSIL | 83 cases (76.14%) | Isolated Koilocytosis | 12 cases (14.45%) |
| | | Koilocytosis + CIN 1 | 18 cases (21.68%) |
| | | Isolated CIN 1 | 53 cases (63.85%) |
| HSIL | 26 cases (23.85%) | Isolated CIN 2 | 8 cases (30.76%) |
| | | CIN2+koilocytosis | 9 cases (34.61%) |
| | | Isolated CIN3 | 3 cases (11.53%) |
| | | CIN3+ koilocytosis | 6 cases (23.07%) |

***Conclusion***

In conclusion, our retrospective analysis of 106 patients diagnosed with cervical dysplasia in 2023 provides valuable insights into the diverse spectrum and prevalence of dysplastic lesions in the cervical epithelium. The majority of cases fell within the low-grade squamous intraepithelial lesion (LSIL) category, accounting for 83% of the cohort. Among LSIL cases, isolated koilocytosis and koilocytosis combined with cervical intraepithelial neoplasia 1 (CIN 1) were the predominant findings. High-grade squamous intraepithelial lesion (HSIL) cases, representing 26% of the cohort, exhibited varying severity, with isolated CIN 2 and CIN2+koilocytosis being the primary observations. Isolated CIN 1 and isolated CIN 3 were also identified, adding complexity to the landscape of cervical dysplasias.

These findings highlight the importance of understanding the spectrum of cervical dysplasias for effective diagnosis and management. Continuous monitoring and further studies are essential

to enhance our comprehension of these lesions, thereby contributing to the development of improved preventive and therapeutic strategies. Additionally, our data emphasize the necessity of tailored approaches based on the specific dysplastic patterns observed in individual patients. By recognizing and addressing these variations, healthcare providers can optimize patient care and outcomes in the management of cervical dysplasia.

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**УДК 616.366-002-018.1-091-053**

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## EXPLORING CHOLECYSTITIS: HISTOPATHOLOGICAL PATTERNS AND AGE-RELATED TRENDS

***Introduction***

Acute cholecystitis is an acute inflammatory disease of the gallbladder. It is often attributable to gallstones, but many factors, such as ischemia; motility disorders; direct chemical injury; infections with microorganisms, protozoa, and parasites; collagen disease; and allergic reaction are involved [1].

Acute cholecystitis is the most frequent complication occurring in patients with cholelithiasis. Cholelithiasis is one of the main diseases associated with obesity. Acute cholecystitis and four (or five) "Fs", it has been said that the patients with cholelithiasis have factors such as "4F" and "5F" (fair, fat, female, fertile, and forty). Common to all individuals with these "4/5Fs" are high levels of estrogen and progesterone. AIDS as a risk factor Acute cholecystitis is initially a chemical inflammation, but regularly complicated by bacterial invasion from the gut. Escherichia coli, Klebsiella and Streptococcus faecalis dominate among aerobic bacteria, whereas Bacteroides fragilis and clostridia are commonly encountered anaerobes. Mixed infections are prevalent. Bactibilia occurs in at least 60% of the early stage of acute cholecystitis and is particularly prevalent in the elderly. Also, bactibilia is very common in recurrent cholecystitis. In the majority of patients, gallstones are the cause of acute cholecystitis. The process is one of physical obstruction of the gallbladder by a gallstone, at the neck or in the cystic duct. This obstruction results in increased pressure in the gallbladder. There are two factors which determine the progression to acute cholecystitis – the degree of obstruction and the duration of the obstruction. If the obstruction is partial and of short duration the patient experiences biliary colic. If the obstruction is complete and of long duration the patient develops