

## **PATHOPHYSIOLOGY AND CONDITION OF PROSTATE IN SUFFERERS OF CHRONIC INFLAMMATION**

**Bayraktar V. M.**

*Mechnikov National University,*

*Odesa, Ukraine.*

virolviro6@gmail.com

**Introduction:** Chronic inflammation in the prostate can persist for years and can be diagnosed through expressed prostatic fluid (EPS) analysis in a laboratory. A microscopic examination of the EPS can reveal its cellular content and specific non-cellular elements and detect bacterial and protozoic content in the prostate. The prostate is a musculo-glandular organ of the reproductive system that functions as an exocrine gland. The secretion of the prostate is produced by numerous mucus glands in the functional tissue. It is released through the gland's ducts into the urethra, where it mixes with sperm and other components of ejaculate.

During prostate inflammation, there are qualitative and quantitative changes in the components of prostatic secretion. These changes can be detected through cytological examination under a microscope. The examination can detect cellular elements such as white blood cells, red blood cells, and macrophages. Epithelial cells, both cylindrical and with altered structure, degenerate into flat and atypical cells as they pass through the ducts. The mucus enters the secretion during passage through the inflamed urethra.

Additionally, lecithin grains, small shiny round or irregularly shaped lipid bodies, and amyloid round bodies, oval or irregularly shaped spherical structures, can also be detected. During staining with Lugol's solution, amyloid bodies turn blue or violet. These structures are formed because of the thickening of prostate secretions during stagnant processes. In normal conditions, prostate secretion is sterile, but it can become contaminated with bacteria or protozoa in the urethra. In the case of inflammation, pathogens or opportunistic microflora can penetrate directly into the prostate. Yeast, such as *Candida* sp., protozoa like *Trichomonas vaginalis*, or fungi like mycelial or pseudomycelial and epithelial cells can be found through microscopic examination.

For a clearer result of bacterial microflora, bacterial culturing is a more informative method. Such detailed examination is necessary for preventive examination of the male reproductive system and for men undergoing treatment for prostatitis symptoms caused by prostate inflammation.

The goal of the research is to identify pathological processes in the prostate for both preclinical and clinical cases.

**Material and Methods:** As part of our research, we examined the prostate fluid of 47 male participants who had agreed to take part in the study. Our focus was on analyzing the quantitative and qualitative contents of expressed prostatic secretion (EPS), specifically looking at indicators such as white blood cells, red blood cells, macrophages, cylindrical epithelial cells, lecithin grains, and amyloid bodies. We used microscopy and stained the samples with the dye methyl green-pyronine. The

microscope used was Micmed-1, which came with a microphoto digital camera made by Olympus.

**Results and Discussion.** The research findings revealed a few distinct groups.

1. Healthy men - 12%.
2. Inflammatory process in prostate without symptoms - 7%.
3. Inflammatory process in prostate with symptoms of chronic inflammation in prostate - 81%.

The use of methyl green-pyronine dye staining on EPS is effective in identifying white blood cells and macrophages. The normal amount of white blood cells in EPS should not exceed 10 per field of view under the microscope. If there are more white blood cells, it indicates the presence of an inflammatory process. An increasing number of macrophages in EPS indicates advanced chronic prostatitis. We have tested the amount of white blood cells, macrophages, desquamation of cylindrical epithelial cells, lecithin grains, and amyloid bodies in EPS. The results allowed us to assess the complex studies presented in Table 1. A bacteriological test is necessary to identify the reason for prostate inflammation.

**Table 1. Shaped elements and other components of EPS**

No	EPS content	Normal result	Prostatitis without symptoms	Prostatitis with symptoms
1.	White blood cells	up to 10	16	18
2.	Red blood cells	0	1	3
3.	Macrophages	0	3	8
4.	Lecithin grains	60-120	76	54
5.	Amyloid bodies	4-8	12	16
6.	Cylindrical epithelium	2-4	7	12

It is crucial to determine the amount of white blood cells to identify inflammatory processes in the prostate. Additionally, the amount of lecithin grains is important because it indicates the status of the prostate. Amyloid bodies are formed when the prostate secretion thickens during stagnant processes. The presence of macrophages in EPS is a clear sign of chronic inflammatory processes and a stagnation of prostate secretion. The presence of a high number of flat and round epithelial cells is also indicative of an inflammatory process. A comprehensive study of all these characteristics provides a general idea of what is happening in the prostate and how it is functioning.

**Conclusions.** The pathophysiology of prostate conditions is presented in a complex study in EPS. The study includes the measurement of the amount of white blood cells, macrophages, content of lecithin grains, amyloid bodies, and amount of cylindrical epithelium. This information is crucial for the diagnosis of prostate conditions and could be used to determine the best treatment approach.

**Keywords:** inflammation, prostatitis, macrophage, expressed prostatic fluid, EPS.