HGPIN

INFORM DIAGNOSTICS
Subspecialty Anatomic Pathology

What is High-Grade Prostatic Intraepithelial Neoplasia?

Prostatic intraepithelial neoplasia (PIN) is the medical term for a condition in which abnormal changes are seen in cells (the epithelial cells) of the prostate gland when a pathologist looks at a prostate biopsy sample under the microscope. However, this is not a diagnosis of cancer. In PIN, the cells of the prostate gland look abnormal, and have similarities with cancer cells, but they have not yet turned into cancer.

When PIN is diagnosed by a pathologist, it will be classified either as low-grade or high-grade, depending on the level of changes seen in the cells. This is an important distinction. Pathologists typically do not diagnose low-grade PIN in the patient's prostate biopsy report, as the risk of progression to prostate cancer is not significantly higher. A diagnosis of high-grade PIN (HGPIN) means that the cells of the prostate biopsy sample are more abnormal than in cases of low-grade PIN, and the chance of missed cancer or of developing prostate cancer may be higher because of this. Many healthcare providers and researchers have therefore looked upon HGPIN as a "marker" or indicator of a higher risk of developing prostate cancer.

Although prostate cancer eventually develops in most men with HGPIN, it does not always happen. When it does result in cancer, the process can take years, or even decades in some patients. Studies have shown that prostate cancer develops in most men with HGPIN within about 10 years.

What causes HGPIN?

Although researchers do not yet know exactly what causes PIN, research continues to look at the steps that turn normal prostate gland cells into PIN and eventually cancer. One of these early steps is thought to involve inflammation of the prostate, and is known as proliferative inflammatory atrophy (PIA). Although it's not yet clear whether PIA does in fact lead to PIN, it does occur in the same region of the prostate gland where PIN and most cancers are found. PIA may occur when something like an infection causes the prostate gland to atrophy (shrink) or become inflamed. This may cause the affected prostate cells to divide faster than normal and start to look different.

High-grade prostatic intraepithelial neoplasia (HGPIN) is a condition in which cells of the prostate gland are abnormal but have not turned into cancer. Although it means there is a higher risk of missed cancer or of the condition turning into cancer, not all men with HGPIN will get prostate cancer.

What are the symptoms of HGPIN?

HGPIN on its own does not cause symptoms. It also does not elevate PSA. Usually it is diagnosed when a man has a biopsy to look into another prostate problem, such as an enlarged prostate, that has caused symptoms.

Who gets HGPIN?

The chance of developing PIN increases as men get older. PIN can start to develop in the prostate glands of some young men even as early as their 20s, although most will have low-grade PIN. The chance of a man having HGPIN increases with his age. Among all men who have had a prostate biopsy, about 1 in 10 get a diagnosis of HGPIN.

Men of certain races are also at a higher risk of developing HGPIN, for reasons researchers do not fully understand. For example, African American men are more likely to develop HGPIN than Caucasian men of the same age.

How is HGPIN diagnosed at the lab?

Tissue from a prostate biopsy is sent to a pathology lab. There the tissue is prepared on glass slides and reviewed by a pathologist, a clinician who has specialized in the diagnosis of disease. The pathologist looks for abnormal cellular changes under a microscope. He or she interprets the findings under the microscope in the context of the clinical

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information provided by the healthcare provider. Some cases require additional special analysis to evaluate proteins, RNA and/or DNA.

The pathologist creates a pathology report with all the important findings, including critical information to help guide treatment and assess prognosis, which is sent back to the healthcare provider.

How is HGPIN treated?

At this time, there is no evidence to suggest that patients with HGPIN need to be treated as though they have cancer. Therefore, treatment for HGPIN will not be required.

It is still unclear exactly which men with HGPIN have a risk of missed cancer, or will go on to develop prostate cancer, because the steps that occur to change a normal prostate cell into a cancerous one are complex and not yet completely understood. But studies have shown that most of the prostate cancers that result after a diagnosis of HGPIN are low-grade cancers. And most men with low-grade tumors will not die as a result of their disease. However, even when it does not result in cancer, HGPIN does not usually disappear on its own. Therefore, because HGPIN means the patient may have a higher risk of developing prostate cancer, the healthcare provider will monitor the patient closely.

How are patients with HGPIN monitored?

At the moment, no guidelines specify how to monitor men with HGPIN. The tests required depend on the patient's unique circumstances. The healthcare provider will determine the appropriate tests. Typically, however, monitoring will involve regular digital rectal examinations, prostate-specific antigen (PSA) blood tests, and repeat prostate biopsies. Some patients may even need an MRI scan to make sure there is no cancer in regions of the prostate gland that were not biopsied.

Inform Diagnostics offers the PINgenius™ test, which can help healthcare providers to predict the risk of cancer at repeat biopsy in patients with a diagnosis of HGPIN. The healthcare provider will advise the patient on required tests and their frequency. The time between biopsies will depend on the patient's specific condition, and the healthcare provider may recommend doing a biopsy sooner if the original report showed that HGPIN was seen in several regions of the prostate.

This type of close monitoring is called "active surveillance" and will allow a diagnosis of prostate cancer to be made at an early stage if it does develop.

Learn more

www.cancer.org/treatment/understandingyourdiagnosis/understandingyourpathologyreport/prostatepathology/high-grade-prostatic-intraepithelial-neoplasia

www.webmd.com/prostate-cancer/guide/prostate-cancer-grading-prostate-cancer

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Find more patient information and resources on our website at www.InformDiagnostics.com.