

New bacteria strains found in prostatitis patients

Whether strains are related to clinical effects and symptoms awaits further study

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Toronto—A team of Canadian researchers has isolated at least two unexpected strains of bacteria from the genitourinary fluids of men with type III (nonbacterial) prostatitis. The two strains, *Proteobacterium* species and *Paenibacillus* species, have never before been identified in patients with prostatitis.

“It [*Paenibacillus*] was identified in Norwegian spruce trees. We also found it in one case in the literature, a case of osteomyelitis, but this is the first time it has been identified in the urinary tract in man,” said Keith Jarvi, MD, associate professor of urology at the University of Toronto and Mount Sinai Hospital, Toronto. “It is interesting that this is the most common bacteria we found. This is quite novel.”

The questions now facing researchers are whether the bacteria have clinical effects and whether they are directly or indirectly related to prostatitis symptomatology.

“This is just an association,” Dr. Jarvi said in a presentation at the AUA annual meeting. “We are not saying that it can cause prostatitis. It appears to be a common bacteria, and it may just be that the microenvironment of the disease is conducive to the growth of this bacteria.

“I would underscore that we don’t know what is going on with these patients, but to find something that has never before been

found in the semen and urine of these patients is interesting. I think we may have to go right back to the basics to find out if these bacteria are important in the condition.”

Less prevalent in controls

The theory that unidentified bacteria may be related to the etiology of the disease has been proposed by others, and culturing bacteria from prostatitis and many other diseases remains a significant challenge, ac-

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cording to Lori Burrows, PhD, of the Centre for Infection and Biomaterials Research, Toronto General Research Institute, who also collaborated on the study. That challenge is being met by new molecular biology techniques and technologies that allow researchers to circumvent obstacles by attempting to create cultures for the bugs.

To identify the bacteria, the research team obtained semen specimens and urine samples from the early (VB1), midstream

(VB2), and endstream (VB3) of 23 men diagnosed with category III prostatitis and eight controls. The samples were centrifuged to pellets, which were then lysed.

Segments of DNA were obtained using restriction enzymes. The DNA fragments were amplified with PCR techniques. The resulting DNA codes were compared with those in a national database in Urbana, IL. This allowed the team to identify species of *Proteobacterium*, and *Paenibacillus*, as well as *Flavobacterium*.

In addition to identifying the bacteria for the first time, the team also found that *Paenibacillus* was far more common in men with prostatitis than the controls.

Larger study needed

The next steps in the endeavor are reasonably clear, according to Dr. Jarvi.

“We need to confirm these findings with a larger study,” he told *Urology Times*. “But to prove that it is causal, an antibiotic that would eradicate it needs to be identified and applied to see if symptoms are altered.

“In theory, quinolones might work, but we need to find the appropriate culture first. We have not cultured it out yet,” he said.

In addition to identifying novel organisms in prostatitis, Dr. Burrows noted that another important aspect of the research was that it showed that new technology can now detect micro-organisms that had escaped notice because they could not be cultured. **UT**