

# Urinary biomarkers can differentiate IC/BPS from other LUTDs

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Urinary biomarkers can differentiate interstitial cystitis/bladder pain

syndrome (IC/BPS) from other lower urinary-tract dysfunctions (LUTDs) in male patients, according to a study published online July 27 in the *International Journal of Molecular Sciences*.

Wan-Ru Yu, from the Buddhist Tzu Chi General Hospital in Taiwan, and colleagues enrolled 198 men with [lower urinary tract symptoms](#) and collected [urine samples](#) before medical treatment to analyze urinary biomarkers that could differentiate IC/BPS from other LUTDs.

The urine samples were examined for 11 urinary inflammatory biomarkers (eotaxin, interleukin [IL]-6, IL-8, C-X-C motif chemokine ligand 10, monocyte chemoattractive protein-1 [MCP-1], macrophage inflammatory protein-1 $\beta$ , RANTES, [tumor necrosis factor](#) [TNF]- $\alpha$ , nerve growth factor, brain-derived neurotrophic factor, and prostaglandin E2) and three oxidative stress biomarkers (hydroxy-2-deoxyguanosin [8-OHdG], 8-isoprostane, and total antioxidant capacity [TAC]).

Among the patients, IC/BPS was diagnosed in 48, bladder-outlet obstruction (BOO) in 66, detrusor overactivity (DO) in 25, hypersensitive bladder (HSB) in 27, and poor relaxation of the external sphincter in 15; 17 patients were normal. The researchers found that compared with all other LUTD subgroups, patients with IC/BPS had significantly higher levels of eotaxin, MCP-1, TNF- $\alpha$ , 8-OHdG, and TAC.

The highest sensitivity, specificity, [positive predictive value](#), and negative predictive value for discriminating IC/BPS from all other LUTD subgroups and the BOO, DO, or HSB subgroups was seen for TNF- $\alpha$  and eotaxin, alone or in combination. MCP-1, 8-OHdG, and TAC did not have a diagnostic value between [male patients](#) with IC/BPS and the BOO, DO, or HSB subgroups.

"Male patients with IC/BPS had higher inflammatory urinary biomarkers eotaxin and TNF- $\alpha$  than that in patients with BOO, DO, and HSB, indicating that the IC symptoms are associated with a higher inflammatory condition of the urinary bladder," the authors write.

**More information:** Wan-Ru Yu et al, Use of Urinary Biomarkers in Discriminating Interstitial Cystitis/Bladder Pain Syndrome from Male Lower Urinary Tract Dysfunctions, *International Journal of Molecular Sciences* (2023). [DOI: 10.3390/ijms241512055](https://doi.org/10.3390/ijms241512055)

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