

## BPH

## P2Y<sub>6</sub> blockade might help control bladder storage symptoms

Selective P2Y<sub>6</sub> receptor blockade shows promise for controlling persistent storage symptoms in men with bladder outlet obstruction associated with benign prostatic hyperplasia (BPH), according to a new study.

Isabel Silva *et al.* investigated the role of the P2Y<sub>6</sub> receptor on the release of non-neuronal ATP and [<sup>3</sup>H]acetylcholine (ACh) from human urothelium strips (including lamina propria) collected from patients with BPH and from control organ donors.

The researchers found that the ATP/[<sup>3</sup>H]ACh ratio was fivefold higher in urothelium strips from patients with BPH than in those from controls. They also found that the selective P2Y<sub>6</sub> receptor agonist increased ATP and [<sup>3</sup>H]ACh release from the urothelium strips to a similar degree in both groups. This effect was blocked by a P2Y<sub>6</sub> receptor blocker.

Using immunofluorescence confocal microscopy data, the researchers

showed that the P2Y<sub>6</sub> receptor is widely expressed in the human urothelium. The authors say that activation of the P2Y<sub>6</sub> receptor facilitates the release of ATP and ACh from urothelial sources, thereby contributing to the initiation and local propagation of signals from the human urothelium to underlying bladder layers.

“Activation of the P2Y<sub>6</sub> receptor amplifies mucosal ATP release underlying bladder overactivity in BPH patients,” explain the authors. “Therefore, we propose the use of selective P2Y<sub>6</sub> receptor blockade as a novel therapeutic strategy to control persistent storage problems in obstructed patients.”

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**Original article** Silva, I. *et al.* Activation of P2Y<sub>6</sub> receptors facilitates non-neuronal ATP and acetylcholine release from urothelium with the lamina propria of men with bladder outlet obstruction. *J. Urol.* doi:10.1016/j.juro.2015.05.080