

CONNEXIN43 EXPRESSION OF BPH PATIENT WITH DETRUSOR INSTABILITY IN THE BLADDER WALL

Hypothesis / aims of study

To study the expression of gap junction connexin43 and vimentin in human bladder wall. To elucidate the relationship between connexin43 and interstitial cells as well as their changes and pathogenesis of detrusor instability (DI).

Study design, materials and methods

Bladder biopsies from ten prostatectomy specimens , which were snap-frozen, sectioned, and stained for connexin-43, vimentin. These patients were analysed by urodynamics inspection, DI was found. Controls included Bladder biopsies from eight bladder operations specimens, these patient have not LUTS, whom residual urine detected negative through ultrasonic inspection. Immunohistochemistry methods were used to detect the expression of Cx43 and vimentin in bladder wall.

Results

HE staining showed that there were changes in the DI group bladder mucosa: The bladder mucosa became thick and the arrangement of urothelial cells was disordered in DI group. In control group the bladder urothelial cells were intact bladder lamina propria and the detrusor bundles was not disorder.

Interpretation of results

Gap junction Cx43 and vimentin were expressed in DI and control groups. They were localized to the bladder lamina propria and between the detrusor bundles. The detrusor cells haven't the expression of Cx43. Express of Cx43 in DI group was significantly higher than in control group in lamina propria of urinary bladder (P <0.01). Express of vimentin in DI group was significantly higher than in control group in bundles of smooth muscle cells too (P <0.05). Express of Cx43 in DI group was significantly higher than in control group in bundles of smooth muscle cells (P <0.01).

Concluding message

Cx43 was expressed not only between the detrusor bundles but also in bladder lamina propria. We therefore hypothesized that the gap junction between detrusor smooth muscle cells and myofibroblasts was mediated by Cx43, and detrusor , smooth muscle cells and myofibroblasts were coupled via gap junctions. In addition, Cx43 was expressed by interstitial cells. The detrusor smooth muscle cells didn't express Cx43 . There was an increase in Cx43 and vimentin levels in DI , suggesting that the increase of communication between interstitial cells was associated with DI.

Disclosures

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