

HIP/PAP EXPRESSION IN THE BLADDER OF PATIENTS WITH PAINFUL BLADDER SYNDROME/ INTERSTITIAL CYSTITIS

Hypothesis / aims of study

Painful bladder syndrome/interstitial cystitis (PBS/IC) is a bladder disorder with symptoms such as urinary frequency, urgency and pelvic pain. Its epidemiology is poorly understood. Some proteins such as epidermal growth factor (EGF), heparin-binding epidermal growth factor-like growth factor (HB-EGF), antiproliferative factor (APF) have been identified as urine biomarkers useful for diagnosis of PBS/IC (1, 2). Hepatocarcinoma-intestine-pancreas/pancreatitis-associated protein (HIP/PAP), a member of the regenerating family, is expressed in pancreatic acini with acute pancreatitis and overexpressed in hepatocellular carcinoma tissue. Recently, it has been found that HIP/PAP acts as an anti-inflammatory factor and causes resistance to apoptosis (3). The aims of this study are to investigate the expression and the distribution of HIP/PAP in bladder specimens obtained from patients with PBS/IC and to determine the correlations between the HIP/PAP expression and PBS/IC.

Study design, materials and methods

Bladder specimens were collected from 5 patients with the ulcerative type of PBS/IC, 4 with the non-ulcerative type of PBS/IC, 2 with normal bladder tissue and 2 with bladder cancer. All nine PBS/IC patients underwent hydrodistention with saline until the bladder pressure reached 80 cmH₂O. After hydrodistention bladder biopsy was performed.

Immunohistochemical staining for HIP/PAP, EGF and HB-EGF was performed in those bladder specimens.

Results

Positive immunoreaction for HIP/PAP, EGF and HB-EGF was observed in the transitional epithelium of bladder specimens with PBS/IC. Of the 5 ulcerative PBS/IC samples, 4 (80%) were positive for HIP/PAP, 3 (60%) for EGF, 2 (40%) for HB-EGF. Of the 4 non-ulcerative PBS/IC samples, 4(100%) were positive for HIP/PAP, 3 (75%) for EGF, 2 (50%) for HB-EGF. The samples with normal bladder tissue were negative for HIP/PAP and EGF, and positive for HB-EGF. The samples with bladder cancer were negative for HIP/PAP, EGF and HB-EGF.

Interpretation of results

We identified the expression of HIP/PAP protein in the transitional epithelium of bladder specimens with both ulcerative and non-ulcerative PBS/IC. The samples with normal bladder tissue and bladder cancer showed negative immunoreaction for HIP/PAP. The rate of positive immunoreaction for HIP/PAP was higher than that for two other proteins (EGF, HB-EGF) in the bladder specimens with PBS/IC.

Concluding message

HIP/PAP might be a biomarker to diagnose PBS/IC and a candidate with anti-inflammatory effect against PBS/IC.

References

- 1) J Urol (2002) 167;2461-2469
- 2) BMC Urol (2005) 5;7
- 3) World J Gastroenterol (2007) 13;170-174

<i>Specify source of funding or grant</i>	no funding
<i>Is this a clinical trial?</i>	No
<i>What were the subjects in the study?</i>	HUMAN
<i>Was this study approved by an ethics committee?</i>	Yes
<i>Specify Name of Ethics Committee</i>	Osaka City University Hospital
<i>Was the Declaration of Helsinki followed?</i>	Yes
<i>Was informed consent obtained from the patients?</i>	Yes