

## URINARY IMMUNOGLOBULIN CONCENTRATION IS NOT INCREASED IN INTERSTITIAL CYSTITIS

### Hypothesis / aims of study

A previous study [1] has shown increased levels of urinary immunoglobulin G and A in interstitial cystitis (IC) patients, suggesting up-regulated immunological reactions in the urinary tract in IC. To confirm the promising results, we quantified urinary immunoglobulin concentrations in patients with Hunner type IC, non-Hunner type IC, and other conditions with lower urinary tract symptoms (LUTS).

### Study design, materials and methods

Patients visiting our institute from 2009 to 2013 were recruited for the study. Urine samples were collected from 110 patients with Hunner type IC, 35 patients with non-Hunner type IC, and 138 patients with other conditions with LUTS. All the IC patients were compatible with NIDDK research criteria and fulfilled three diagnostic requirements of IC recommended by clinical guidelines for interstitial cystitis and hypersensitive bladder syndrome [2]. The diagnosis of the comparative group was benign prostatic hyperplasia (n=56), pelvic organ prolapse (n=21), overactive bladder (n=19), neurogenic bladder (n=19), stress urinary incontinence (n=10), genitourinary cancer (n=6), hydronephrosis (n=4), or urinary tract infection (n=3). The urine samples were frozen at -80°C. After thawing, the samples were centrifuged and the supernatants were analysed.

Urinary immunoglobulin G, A, M, D and G4 were quantified by turbidimetric immunoassay, and non-specific immunoglobulin E was quantified by fluorescence-enzyme Immunoassay.

### Results

Patients' backgrounds were shown in Table 1.

Urinary immunoglobulin concentrations were less than the lower limit of quantitation in most of the patients (Table 2). There were no significant differences in urinary immunoglobulin A and G levels among those 3 groups (Figure 1). No specific clinical features were identified for IC cases with positive urinary immunoglobulin.

Table 1. Patients' backgrounds.

	Hunner type IC	Non-Hunner type IC	Other conditions	P value
Male / female	11 / 99	10 / 25	76 / 62	<0.0001
Age (mean±SD)	66.7±10.6	62.6±17.4	65.0±16.2	0.322

Table 2. Percentage of patients with less than the lower limit of quantitation of urinary immunoglobulin concentration.

	Lower limit of quantitation	Hunner type IC (n=110)	Non-Hunner type IC (n=35)	Other conditions (n=138)
IgG	0.3 mg/dl	82%	97%	91%
IgA	0.2 mg/dl	43%	60%	47%
IgM	0.2 mg/dl	95%	94%	92%
IgD	0.6 mg/dl	99%	100%	100%
IgE	5 IU/ml	100%	100%	99%
IgG4	3 mg/dl	99%	100%	99%

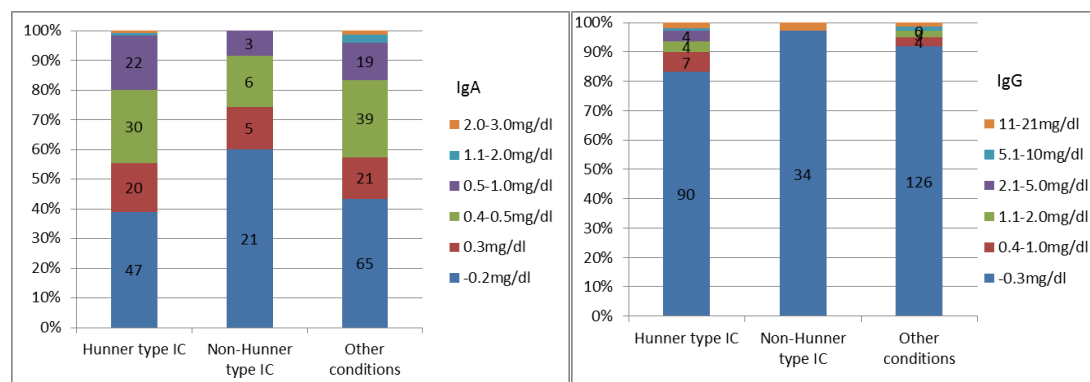


Figure 1. Distribution of urinary concentrations of Immunoglobulin A and G

### Interpretation of results

The present results showed that the urinary immunoglobulin levels are not increased in IC patients regardless the presence or absence of Hunner lesions. This is inconsistent with previous study results reporting increased urinary immunoglobulin concentrations in IC. The discrepancy may be attributable to the difference in assay methodology and/or patient characteristics.

### Concluding message

Urinary immunoglobulin concentration levels are not increased in IC. Further investigations are needed to confirm the results.

#### References

1. Gamper M, Viereck V, Eberhard J, et al. Local immune response in bladder pain syndrome/interstitial cystitis ESSIC type 3C. Int Urogynecol J. 2013;24:2049-57
2. Homma Y, Ueda T, Tomoe H, et al. Clinical guidelines for interstitial cystitis and hypersensitive bladder syndrome. Int J Urol. 2009;16:597-615

#### Disclosures

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