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URINE MACROPHAGE MIGRATION INHIBITORY FACTOR (MIF) AS A DIAGNOSTIC MARKER IN INTERSTITIAL CYSTITIS

Hypothesis / aims of study
Macrophage migration inhibitory factor (MIF) is a mediator of the endocrine system and the immune system, it is known to act as a proinflammatory protein of many inflammatory reactions. The symptoms of interstitial cystitis is thought to be associated with chronic inflammation of the bladder due to multifactorial causes including infection and autoimmune. However it is unclear whether MIF may play a role in pathogenesis in chronic inflammation of the bladder like as interstitial cystitis (IC). We evaluated clinical usefulness of urine MIF test as a biomarker of IC.

Study design, materials and methods
Voided urine samples were obtained from 20 healthy female volunteers and 30 female patients with IC. There was no pyuria and bacteriuria in both groups. The glomerulation and/or Hunner's ulcer were identified in all of IC group in cystoscopic examination. Quantitative measurement of urine MIF level was analyzed using Human MIF DY289 ELISA kit (R&D systems, Inc. Minneapolis, MN, USA), and adjusted by urine creatinine level. Mann-Whitney test and ROC curve was used to compare both groups and decide the cut-off value.

Results
Mean age of control and IC group was 57.4 years and 42.8 years respectively. Mean level of urine MIF adjusted by urine creatinine in control and IC group was 0.54ng/ml and 7.06ng/ml.

Interpretation of results
Mean level of urine MIF in IC group (7.06ng/ml) was higher than control group (0.54ng/ml) ($p<0.001$). Area under curve in ROC curve was 0.960 (95% CI, 0.909-1.011), and sensitivity and specificity were 90% and 95% respectively when the cut-off value was decided to 2.10ng/ml.

Concluding message
MIF is a precursor of an inflammatory reaction and it acts by reacting with many inflammatory cytokines. The result of our study shows that MIF was highly expressed in urine of patients with IC. Our data suggest that the MIF may play a role in pathogenesis of IC, and urine MIF measurement could be a useful biomarker in diagnosis of IC.

Disclosures
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