

## INTERLEUKIN-8 IN URINE AFTER TRANSVAGINAL URETHRAL MASSAGE COMBINED WITH URINE DIARIES MAY ELUCIDATE THE DIAGNOSIS OF URGENCY

### Hypothesis / aims of study

The urine diary is golden standard in diagnosis and evaluation of treatment of urgency incontinence. Urine diaries however contain several sources of error and, if possible, an objective estimation of urgency should be preferred.

There are indications that a low grade inflammation in the urethra may result in a sensitization of the voiding reflex and contribute to urgency in the Over Active Bladder syndrome (OAB)(1). Increased concentrations of Interleukin 8 (IL-8) in the first urine portion delivered after transvaginal urethral massage, have been described in patients applying for urgency. It has also been shown(1) that IL-8 in urine, after transvaginal urethra massage, is higher in patients with urgency than in healthy controls.

The current study was performed to evaluate if it was possible to use IL-8 as an additional tool to differentiate urgency from excessive liquid intake from patients with "true" urgency.

### Study design, materials and methods

45 consecutive patients applied for OAB-symptoms. 3 patients were excluded because of bacteriuria. 2x24 h urine diaries were obtained before and after treatment. Before treatment, a standardized transvaginal urethra massage was performed with semi-filled bladder. The patients voided three portions, two for cytokines and a third for culture. For treatment the massage was repeated 4 times with 3 ml of a cortisone ointment injected in the urethra after each massage. The patient was then told not to void within 20 minutes. The massage sessions were completed within a fortnight. The mean of the initial urine volumes recorded was compared to the level of IL-8 in the first sample.

### Results

Normal value for IL-8 in passed urine without massage is <200ng/L. The range of IL-8 in the first portion of urine passed after massage was 19-2095 ng/L in the total material. 23 patients presented normal values (< 200ng/L). Patients with a normal IL-8 in their first portion of urine after massage, had registered a mean volume of urine of 21,1dl/24h before treatment. If IL-8 was elevated the mean volume presented was 18,9 dl/24h. The difference was not significant.

Reported volumes in the group with normal IL-8 were always higher, though not statistically significant, compared to volumes in a group with pathological levels at different "cut-off" IL-8- levels.

However if the volumes registered by patients with low levels of IL-8 (< 100ng/L (13 pat.)), were compared to those with reported very high levels ( IL-8 >600ng/L (7 pat.)) the patients with low IL-8-levels reported statistically highly significant higher volumes than those with pathologically high IL-8-levels.

The mean decrease of sessions after treatment was 2,5 sessions based on the diaries before and after treatment. 2 patients reported an increased number of sessions ( 2 and 1,5 sessions) while one patient reported the same number of sessions before and after treatment.

### Interpretation of results

As a high level of IL-8 seems to indicate the presence of urethral inflammation in patients with OAB- symptoms, the absence of such an elevation in patients applying for urgency may indicate that the urgency is a normal reaction on an increase urine production. This was, however, not in accordance with urine diaries presented. A closer examination of the diaries, revealed that the mean reported urine volumes always were higher in the "normal IL- 8 -group" compared to the group with high IL-8. A further analysis showed that if IL-8 was rather low, the volumes presented were statistically significant larger than reported by patients with the same symptoms but pathological high IL-8-levels. It is not likely that this is an effect of dilution as the volume analyzed is the first "standard" portion (tube) of urine that is allowed to pass through the urethra after massage. It is thus highly probable that the increased volumes of urine represent a higher liquid intake, resulting in a higher frequency of micturition. This increase of frequency is then experienced as urgency.

The decrease of number of sessions after anti-inflammatory treatment was about the same as has been reported from other studies (1).

### Concluding message

The quality of urine diaries is often low and has to be completed by questionnaires. As it highly possible that an inflammatory reaction in the urethra contributes to symptoms in OAB, the absence of inflammatory markers i.a., IL-8 in urine after a transvaginal urethra massage. In spite of normal urine diaries.

The effect of local treatment with cortisone ointment supports suggestions that OAB-symptoms emerges from urethra. IL-8 in urine after transvaginal urethra massage might be used as a tool in the evaluation of urgency in women.

### References

1. Lofgren O NEUROLOGY AND URODYNAMICS 2009:28,812

Disclosures

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