

# Renal concentration capacity in primary hyperparathyroidism and changes after surgery and during medical management and monitoring

**GP50**

Mirnaya S.S., Mokrysheva N.G., Rozhinskaya L.Ya.  
Endocrinology Research Centre, Moscow, Russia



## Objective

Primary hyperparathyroidism (pHPT) is associated with increased risk of death, and in some studies cardiovascular disorders were inversely related to urine osmolality. The aim was to evaluate the renal concentration capacity in patients with mild and severe pHPT, and its changes after surgery for pHPT and during monitoring.

## Patients and methods

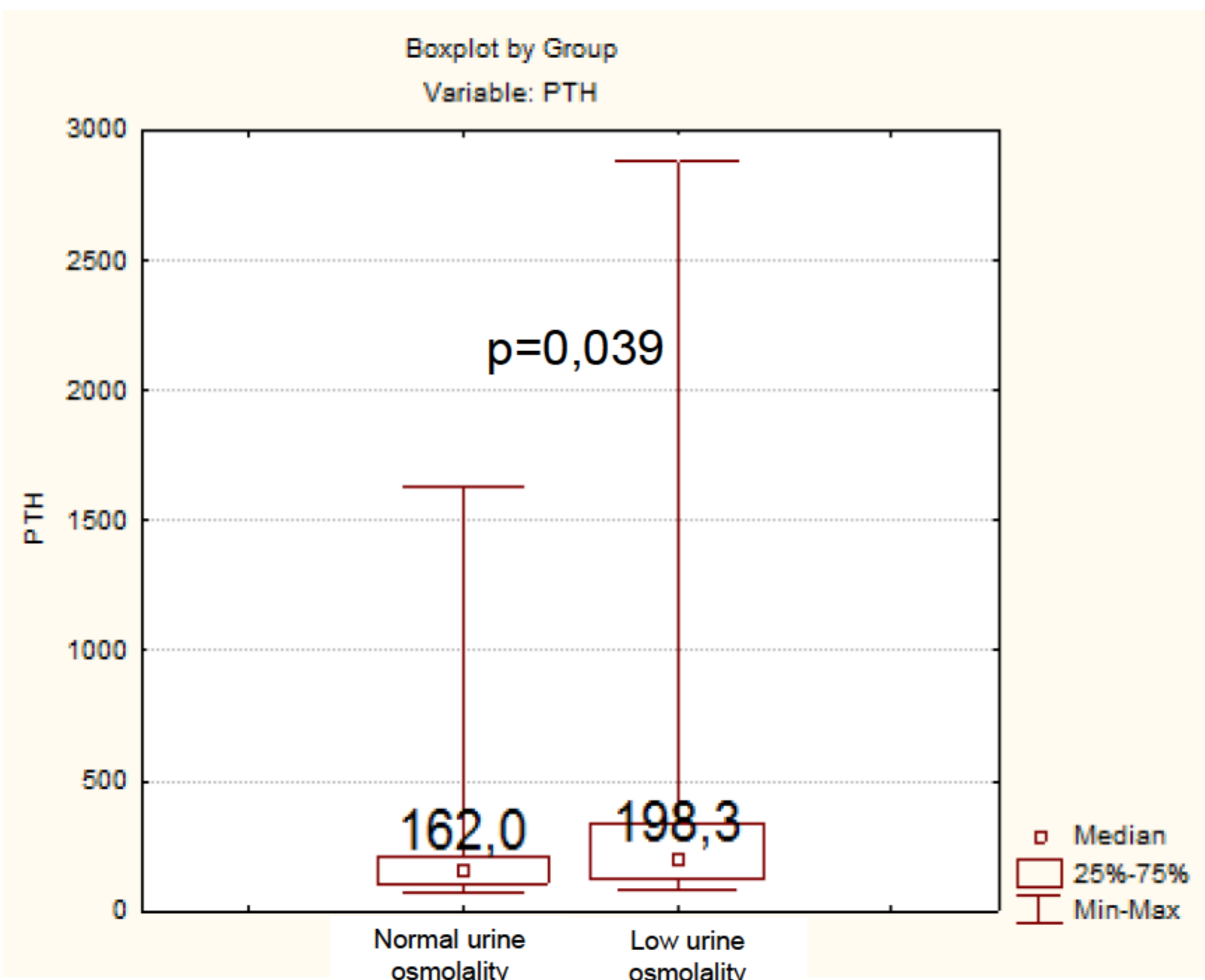
The study included 77 patients (median age 57 [52;61]) with pHPT, group contained patients with mild form (n=23).

Osmolality index was calculated as urine osmolality to blood osmolality ratio. Renal concentration capacity impairment was diagnosed with osmolality index less than 2. Changes in osmolality index were evaluated in 13 patients after surgery for pHPT and in 13 patients during medical management and monitoring. Follow-up period was up to 24 months.

## Results

Osmolality index in patients with pHPT was low with median 1.64 [1.36; 2.08]. We found a high prevalence of renal concentration capacity impairment in patients with pHPT (72%). Both patients with mild and severe pHPT had similar prevalence. Urine osmolality was Me 0.475 [0.39; 0.588] osm/kg. In patients with renal concentration capacity impairment PTH level was significantly higher than in patients with normal urine osmolality (p=0.039) (pic.1).

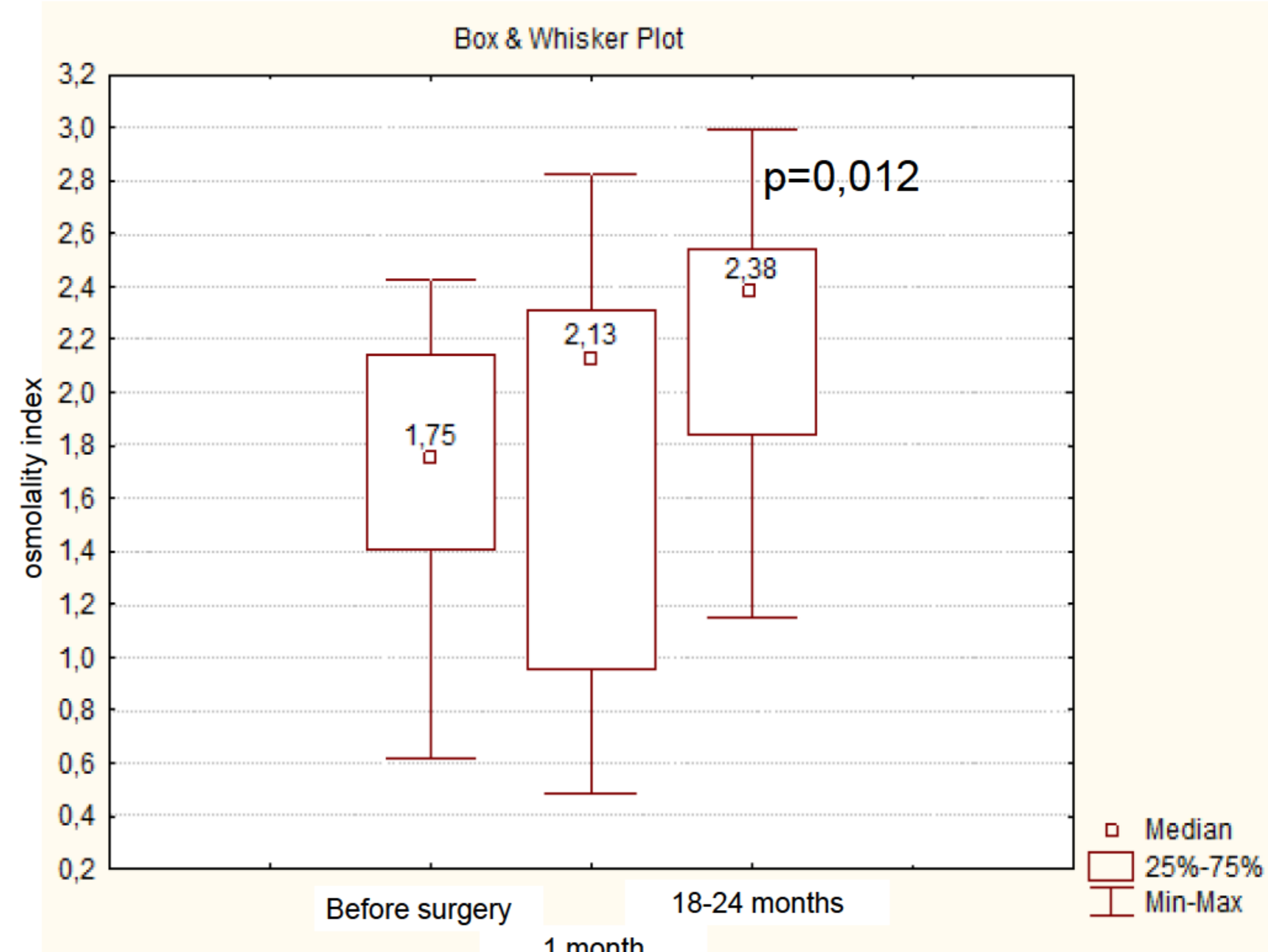
**Picture 1. PTH level in patients with normal and low urine osmolality**



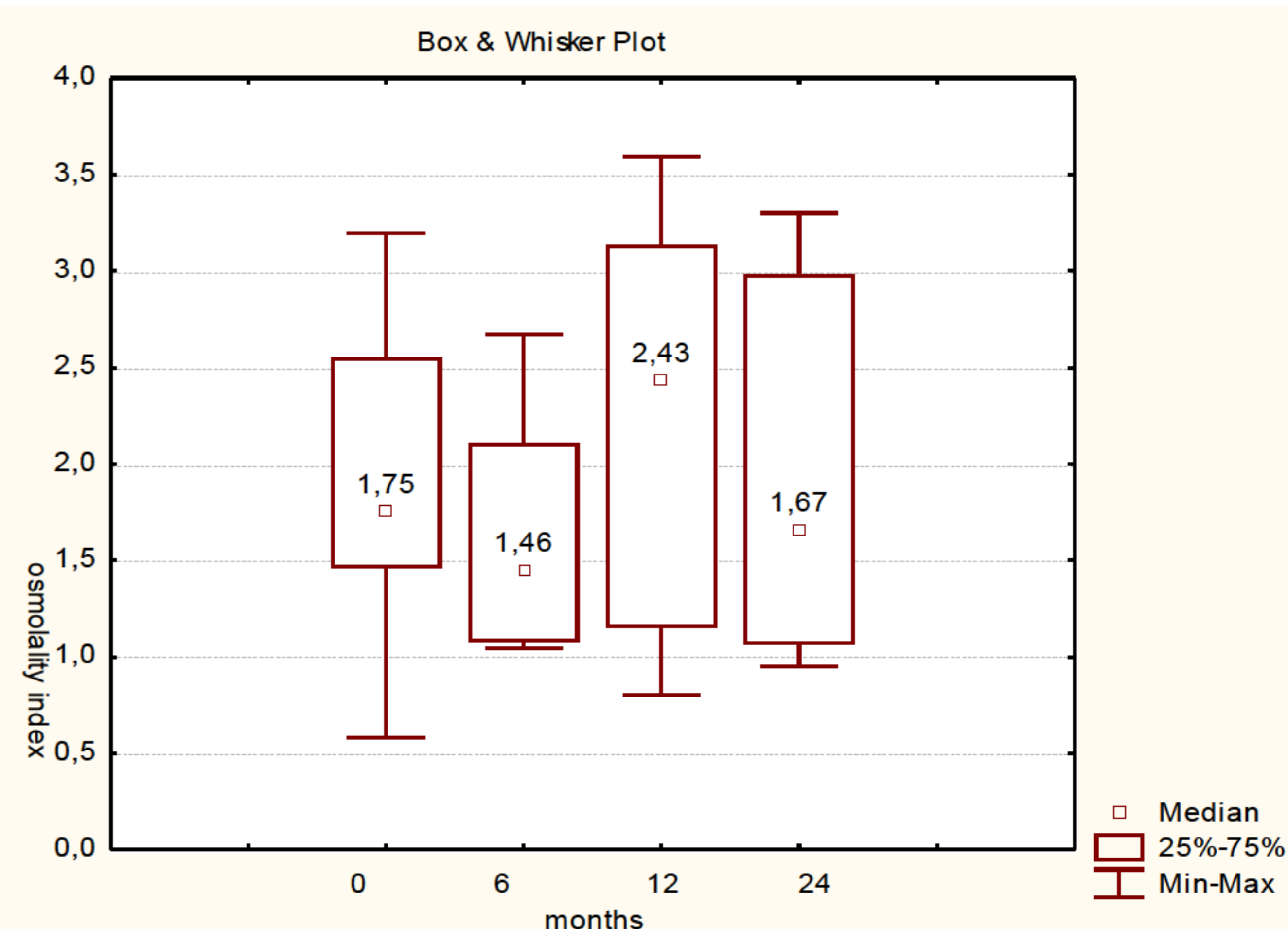
Long-term changes in renal concentration capacity after surgery for pHPT were characterized by increase of osmolality index, also in patients with mild form, (initially 1.75 [1.4; 2.14], after surgery 2.38 [1.84; 2.54]), changing Me was +12.4% in 6-24 months (p=0.012) (pic.2).

No significant changes in osmolality index were observed during medical management and monitoring (pic.3), the same data was found for patients with mild form pHPT.

**Picture 2. Changes in osmolality index after surgery for pHPT**



**Picture 3. Changes in osmolality index during monitoring in pHPT**



## Conclusions:

Renal concentration capacity impairment is common in mild and severe pHPT. Renal concentration capacity is restored after surgery for pHPT. The findings of this study add cause for measurement of urine osmolality or osmolality index in all patients with pHPT.

Contact author – svetlanamirnaya@yahoo.com