

Different values of urinary fractionated metanephrines in 82 subjects after unilateral adrenalectomy for pheochromocytoma according to the time intervals after surgery

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OBJECTIVES

Urinary fractionated metanephrines are one of methods to monitor recurrence of pheochromocytomas after adrenalectomy. After adrenal surgery, the values of urinary fractionated metanephrines are expected to be reduced, however studies are scarce. This study aims to compare urinary fractionated metanephrines in subjects undergoing unilateral adrenalectomy to those in non-pheochromocytoma controls and healthy volunteers.

METHODS

A retrospective study in a single tertiary center. All patients had undergone unilateral adrenalectomy for pheochromocytomas and had no evidence of recurrence during the follow-up period. Urinary fractionated metanephrines were determined before and after surgery with 3 or 6 month-intervals. Urinary fractionated metanephrines were categorized into three groups according to the postoperative period after surgery.

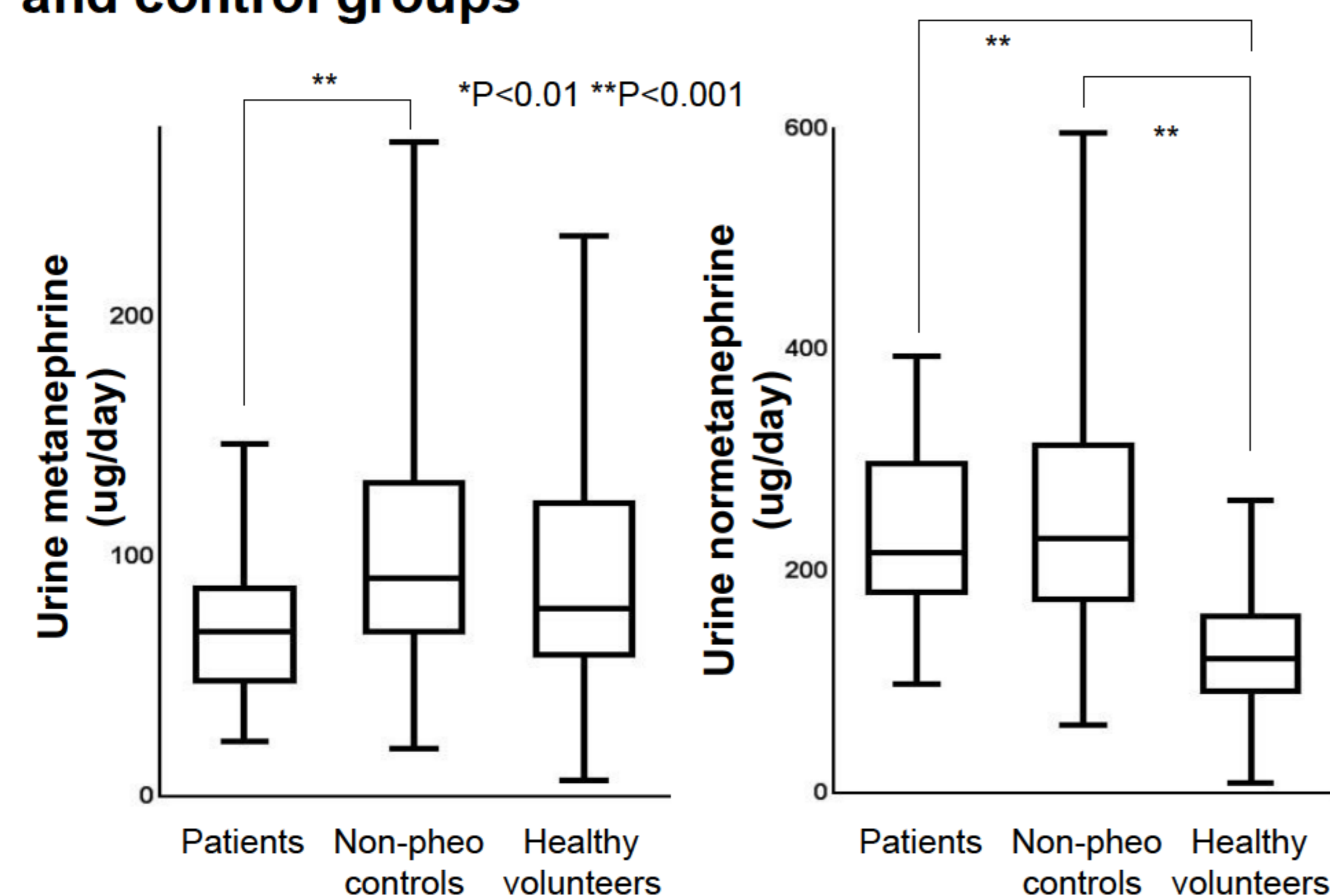
RESULTS

Comparison of urinary fractionated metanephrines in patients and control groups

Variable	Patients (n=82)	Non-pheochromocytoma controls (n=294)	Healthy Volunteers (n=49)
Gender, female (%)	50 (61%)	136 (46%)	24 (49%)
Age, mean±SD (years)	46±13	48±15	24±3
Mass size, median (cm) ^a	4.0 (3.0, 5.5)	–	–
Hypertension, n (%)	35 (43)	210 (71)	0
Urinary MN (ug/day) ^a	70.0 (48.2, 92.3)	92.0 (69.0, 133.3)	78.6 (59.2, 122.5)
Urinary NM (ug/day) ^a	220.9 (181.9, 309.9)	232.0 (178.3, 318.0)	123.8 (93.0, 162.3)

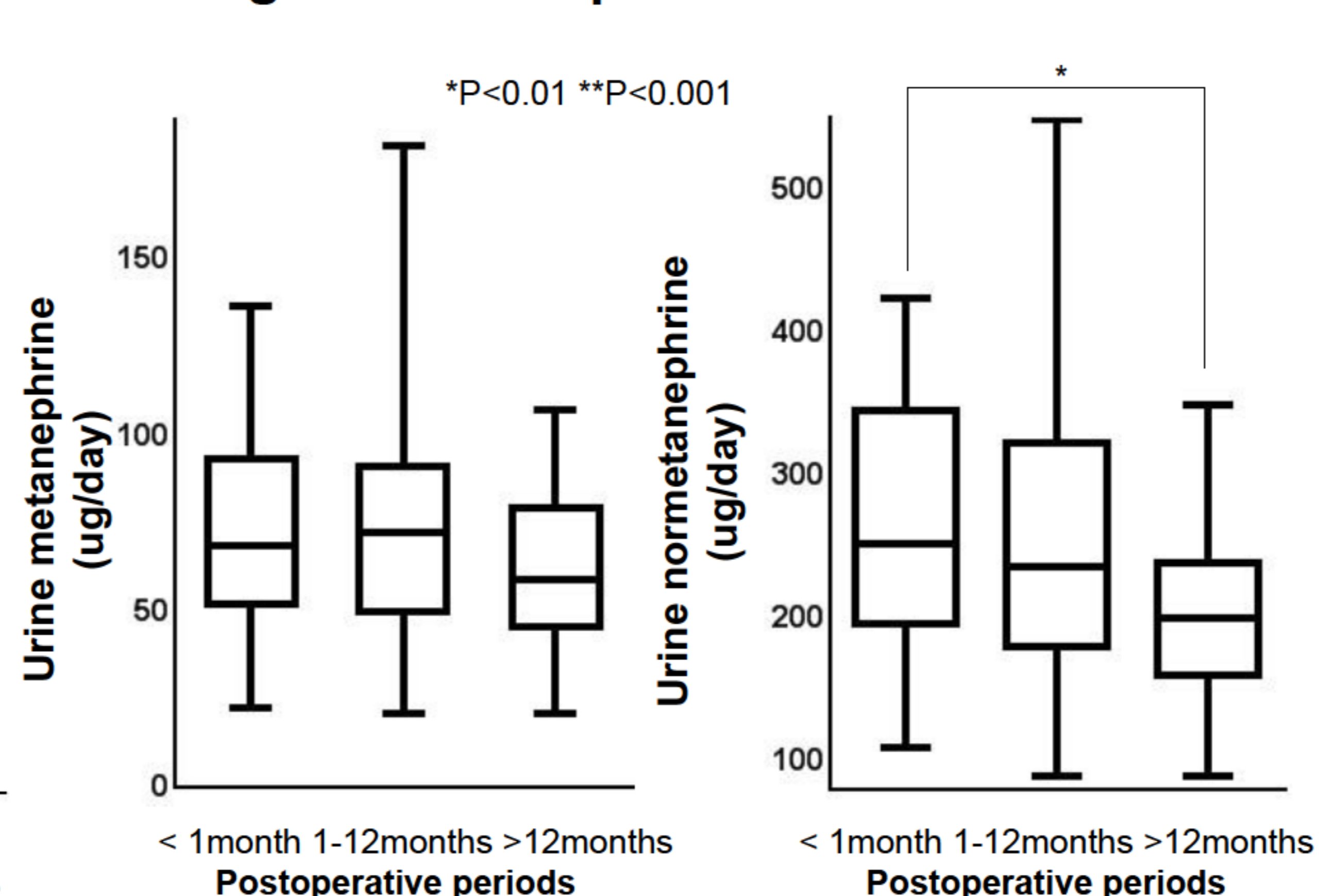
MN, metanephrine; NM, normetanephrine ; ^aData are presented as median (interquartile ranges).

Urinary fractionated metanephrines in patients and control groups



Non-pheochromocytoma controls are patients who had been confirmed as not having pheochromocytoma after adrenal surgery or showed no adrenal lesion on adrenal imaging and had undergone more than 2 years of clinical follow-up.

Postoperative urinary fractionated metanephrines according to the time period



The urinary MN levels after adrenal surgery were lower than those in 294 non-pheochromocytoma controls (70.0ug/day vs.92.0ug/day, $p<0.001$), whereas urinary NM levels did not differ (220.9ug/day vs. 232.0ug/day).

With respect to the time interval after the operations, median urinary NM levels in early postoperative period (<1 month) was higher than the concentration in the later period (>12 months after surgery) (287.3ug/day vs. 204.0ug/day, $p<0.01$).

CONCLUSIONS

Urinary MN levels were lower in patients after adrenalectomy, but urinary NM levels were not changed as compared to non-pheochromocytoma controls, although higher levels of urine NM were observed in patients who had undergone recent surgery. Adjusted reference interval levels of urinary MN after adrenalectomy are required for the accurate detection of pheochromocytoma recurrence.

REFERENCES

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