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Shim K S[1], Bae J H[1], Lee J G[1], Lee K C[2], Kim H J[3], Park H J[4], Kwon C H[4], Moon D G[1]
1. Korea University Medical Center, 2. Inje University Hospital, 3. Dankook University Hospital, 4. Sungkyunkwan University Hospital

THE SAFETY AND EFFECTS OF DESMOPRESSIN IN THE TREATMENT OF ELDERLY PATIENTS WITH NOCTURIA FOR 1-YEAR FOLLOW-UP.

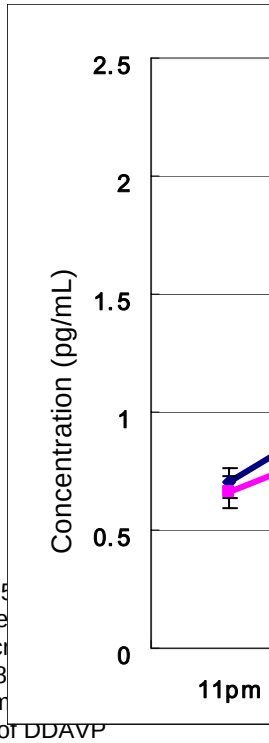
Hypothesis / aims of study
The purpose of this study was to investigate safety and effects of oral desmopressin (DDAVP) in elderly patients with nocturia for 1-year follow-up.

Study design, materials and methods
We selected 12 male patients over 60 years old who visited our outpatient clinic on complains of nocturia or BPH symptoms. They had more than three times of nocturia per night based on a 7-day voiding diary. They took one 0.2mg DDAVP tablet at bedtime every day for 1 year and urine and blood sampling were performed every 3month. In each serum, levels of BUN/ Creatinine, urea, nitrogen, glucose, Na, K, Cl, Ca, P, Mg, uric acid were measured. For timed urine study, urinary creatinine, urea, nitrogen, glucose, Na, K, Cl, Ca, P, Mg, uric acid, osmolality, volume of urine were measured.

Results
Table Significant variables before and every 3 months and 1 month washout after 1 year medication with DDAVP
*: stastistically significant (before vs 12mon)
†: stastistically significant (12mon vs 13mon) ‡: 1 month after stop medication

Mean±SD	Before	3mon.	6mon.	9mon.	12mon.	13mon.‡
Total urine output (mL)	**1719±521**	1644±222	1768±775	1496±588	1495±394	1724±613
Noctunal urine output (mL)	**641±265**	498±268	481±304	430±510	**441±308***	***751±415†***
No. of nocturia	**4.85±0.93**	1.11±1.36	1.89±0.93	1.88±0.83	**1.43±0.79***	***3.14±1.07†***
Sleeping time (min)	**400.0±36.9**	394.3±66.3	421.4±47.0	439.4±59.6	427.2±55.7	414.7±48.6
1st voiding time (min)	**125.8±13.7**	265.8±35.1	291.1±45.7	322.8±64.3	**312.5±58.7***	***155.5±47.1†***
QoL (0-6)	**5.5±0.52**	2.1±0.97	1.7±0.58	1.9±0.65	**1.5±0.82***	***5.3±0.43†***
Serum Na (mmol/L)	**142±1.94**	140±1.70	139±2.04	139±2.54	**136±4.27***	***139±1.05†***
Urine Na (mmol/L)	**186±81.1**	203±49.4	170±64.5	190±82.6	209±63.7	***157±65†***
Urine osmolality (mOsm/Kg)	**496±119**	505±165	434±138	516±158	513±157	***390±79.3†***

Figure Circardian variation of ADH



Interpretation of results
Patient group of 12, average age of 69.2 (range 60 - 84) year-old had a total urine volume of 1719.08±5 nocturia volume of 641.17±265.17ml and nocturnal polyuria index of 0.37±0.13. There was no significant diffe total urine output before and after DDAVP administration, but nocturnal urine output was significantly decr 440.9±308.3 ml (p<0.01). After administration of DDAVP, sodium level was significantly increased from 186.8 to 209.4 mmol/L (p<0.05) in timed urinary electrolytes. Urinary chloride level was significantly increased from 228.3 mmol/L (p<0.05). Urine osmolality was significantly increased form 496.3 to 513.3 after administration of DDAVP

($p<0.05$). The levels of ADH before medication were not significantly different from those of 1 month after stop the 1-year medication. No significant systemic complication was found during medication.

Concluding message

These results suggest that DDAVP induced natriuresis, and thus increased urine osmolality, condensing the urine, while decreasing nocturia. Desmopressin was well tolerated for I year in elderly patients with nocturia and long term administration of DDAVP did not affect the basal secretion of ADH, but the results suggest that serum sodium should be measured after treatment carefully.

References

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FUNDING: NONE
DISCLOSURES: NONE
HUMAN SUBJECTS: This study was approved by the Korea University College of Medicine IRB and followed the Declaration of Helsinki Informed consent was obtained from the patients.