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**Title:** PHARMACOKINETICS OF 0.4 MG DESMOPRESSIN PER ORALLY IN ELDERLY NOCTURIA PATIENTS.

### Aims of Study:

Nocturia is reported with a similar frequency in men and women. For many years nocturia was regarded as one of the symptoms of bladder dysfunction or bladder outlet obstruction. However in many cases nocturia is caused by changes in fluid metabolism towards higher nocturnal diuresis. Pharmacokinetics of desmopressin acetate (dDAVP) has been studied in healthy subjects and in diabetes insipidus patients. The aim of this study is to evaluate the pharmacokinetic profile of dDAVP following oral drug administration in elderly nocturia patients with reference to baseline characteristics of these subjects.

### Methods:

Fifteen men and 9 women, all elderly and complaining of nocturia ( an average of  $\geq 2$  voids per night) were included in the study after a screening period of 7 days. During the screening week the patients were asked to register time and volume of all micturition and fluid intake for at least three 24-hour cycles. The remaining nights of the screening week the time and volume of each nocturnal void and the morning void were recorded. From the registered data the number of nocturnal voids, the diurnal and nocturnal urine production as well as the maximal bladder capacity were assessed.

On the day of the pharmacokinetic study the subjects arrived in the morning. Baseline measurements were taken and the patients were given the medicine, dDAVP 0.4 mg per orally. Blood samples were taken at predetermined time points up to 8 hours after drug administration.

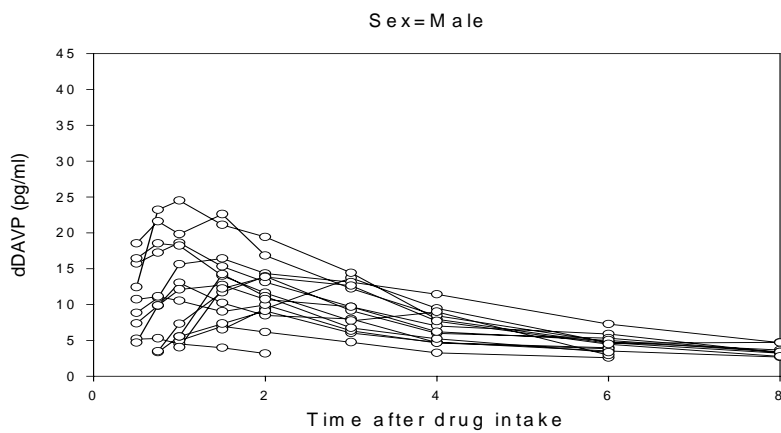
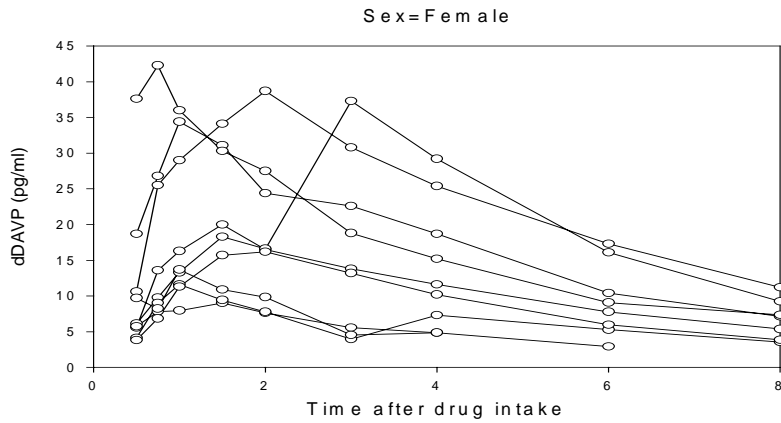
### Results:

Baseline parameters (mean and range) are shown in the table.

Sex	Age (years)	Body weight (kg)	Number of Nocturnal voids	Nocturnal Diuresis (ml)	24-hour urine production (ml)	Maximal bladder capacity (ml)
Male	68 (65-85)	78.1 (69.5-90.9)	2.4 (2.0-4.1)	750 (495-1060)	1968 (1577-2642)	390 (280-500)
Female	73 (65-84)	66.7 (45.7-82.7)	2.8 (2.3-3.3)	980 (317-1052)	1937.2 (768-2398)	450 (150-650)

In all but 2 patients the mean nocturnal diuresis exceeded 33% of the 24-hour diuresis.

The figures below show the dDAVP concentration over time. The difference between male and female absorption, given as area under curve ( $\ln(\text{AUC}_{\text{inf}})$ ), is statistically significant ( $p=0,025$ ), as it is the case with the  $\ln(\text{AUC}_{\text{inf}}/\text{body weight})$  ( $p=0,002$ ). No gender difference could be found in the rate of absorption,  $t_{\text{max}}$  and  $t_{\text{half}}$ .



**Conclusions:**

The extent of absorption (AUCinf) of dDAVP is higher in the female group compared to the male group. When adjusting the AUCinf for body weight the difference persists. Baseline study show that women have a higher 24-hour diuresis per kg body weight and a higher nocturnal diuresis than men. There are no clear differences in bladder capacity or number of nocturnal voids.

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