

## ORAL DESMOPRESSIN IN THE TREATMENT OF NOCTURIA IN AN AGING POPULATION

### Hypothesis / aims of study

Nocturia, defined as excessive urinating at night, is caused by different factors. If pathological causes such as infections, obstructions, etc. are excluded, an important cause in an aging population could be an insufficient level of ADH (D-arginine Vasopressin = DAVP) at night. The primary endpoint of this research was the proportion of patients with 50% or more reduction in nocturnal urine production resp. nocturnal voiding and elevation of urine osmolarity. Secondary endpoints is to prolong sleep duration by reducing nocturnal urine production.

### Study design, materials and methods

40 patients (20 males and 20 females) with an average age of 61 years were screened using micturition diaries (defined as 2 or more nocturnal voidings), nocturnal polyuria greater than functional bladder capacity and measuring urine osmolarity at night. An open-label dose-titration period established an optimal dosage for the patients at 0.2 mg. After a one-week wash-out period patients were randomised to receive either 0.2 mg desmopressin (n= 20) or placebo (n=20) for one month.

### Results

The proportion of patients showing a 50% reduction of nocturia during the double-blind period was significantly higher in the group treated with desmopressin 0.2 mg (n=12 or 60% ) compared with placebo (n= 2 or 20%). Urine osmolarity was also significantly higher in the desmopressin group (810 mOsmol/kg H<sub>2</sub>O) compared to 630 mOsmol/kg H<sub>2</sub>O, with reduced volume of nocturnal voiding under drug. Sleep duration was improved under desmopressin with additional 180 min longer, than under placebo (42 min).

### Interpretation of results

Patients with desmopressin experienced more than five hours uninterrupted initial sleep per night (60%) compared with 6% under placebo. Nocturnal urine production under desmopressin declined from 1.51 ml/min to 0.84 ml/min, under placebo from 1.44 ml/min to 1.38 ml/min.

All patients treated with desmopressin accepted to continue on the medication in an open-labelled phase for one year.

### Concluding message

Desmopressin is an effective treatment for nocturia associated with nocturnal polyuria – upon exclusion of other pathologic reasons such as infections, neuropathy, obstruction or anomalies etc. It is a useful treatment option in many aging patients of both genders. The most important result is the prolongation of sleep duration by reducing the number of nocturnal voidings. Treatment with desmopressin improved quality of life by decreasing the number of times the patients had to void at night and increasing the duration of unbroken sleep.

<b>Specify source of funding or grant</b>	None
<b>Is this a clinical trial?</b>	Yes
<b>Is this study registered in a public clinical trials registry?</b>	No
<b>Is this a Randomised Controlled Trial (RCT)?</b>	Yes
<b>What were the subjects in the study?</b>	HUMAN
<b>Was this study approved by an ethics committee?</b>	Yes
<b>Specify Name of Ethics Committee</b>	Local EC of the Gulf Medical College Ajman/UAE
<b>Was the Declaration of Helsinki followed?</b>	Yes
<b>Was informed consent obtained from the patients?</b>	Yes