episode shows that speculation about risks of infection is no substitute for measuring the transmission occurring in practice.

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Desmopressin urine concentration test

Formerly intramuscular injection of vasopressin tannate in oil provided a useful and convenient means of assessing urine concentrating ability,¹ although it was a less potent stimulus than fluid deprivation.² Because vasopressin tannate in oil is now no longer manufactured another practical test of concentrating ability must be defined. We describe an investigation of the use of 1-diamino,8-D-arginine vasopressin, desmopressin (DDAVP, Ferring Pharmaceuticals Ltd), by intramuscular (IM) and intranasal (IN) administration to test urine concentrating ability in adults, firstly in an overnight test and then in a shorter day test using only IN desmopressin. The desmopressin day test is simpler and as useful as the conventional overnight vasopressin test.

Patients, methods, and results

Overnight test—We studied 28 healthy students (aged 18-21) and 18 convalescent patients (aged 24-66) who had normal blood urea concentrations, neither proteinuria nor glycosuria, and who were not taking diuretics. Fluid was not restricted. We compared urine concentration after IN desmopressin (40 µg) and IM desmopressin (2 µg), using each individual as his own control. Desmopressin was given between 1630 and 1700; the osmolality of the last urine specimen passed before retiring to bed and the first two specimens thereafter was measured. For the maximum urine osmolality recorded for each individual (figure) the mean for students (IM 1080 mOsm/kg ± 148 SD; IN 1075 ± 148) was higher ($P < 0.001$ by Student's *t* test) than for convalescent patients (IM 839 ± 164 SD; IN 838 ± 190) after each route of administration. No significant difference was found between the maximal response to IN and IM administration, although the response to IN was more rapid; one-half of the subjects reached a maximal concentration before retiring to bed, compared with one-third after IM injection.

Day test—A further eight healthy volunteers (aged 20-41) were given IN desmopressin (40 µg) at 0900 to determine whether the relative dehydration of the overnight test or the time of testing contributed to the result. The osmolality of the next two urine specimens passed was measured. The mean osmolality of the second specimen—that is, urine produced between five and nine hours after IN desmopressin—was 999 ± 68 SD mOsm/kg, a figure not significantly different from the mean maximum osmolality of students in the overnight test (1075 ± 148).

Comment

IN and IM desmopressin were equally effective; injection is therefore no longer a necessary part of urine concentration tests either in adults or in children.³ The time of day was of no consequence. The osmolality of urine passed five to nine hours after desmopressin in the day test was similar to the maximum achieved overnight.

Convalescent patients took up to two hours longer to achieve maximal concentrations but in all cases the osmolality of the first

Maximal urine concentration (mOsm/kg of water) of healthy individuals and convalescent patients after intramuscular (IM) and intranasal (IN) desmopressin in an overnight test. Mean response was higher ($P < 0.001$) in healthy individuals; IM and IN desmopressin were equally effective.

specimen in the overnight test (five to nine hours after desmopressin) provided a close approximation of the maximum concentration that was reached—being either already over 800 mOsm/kg or within 100 mOsm/kg of the maximum eventually reached by that individual. Whether the lesser response of convalescent patients reflected age or general effects of illness is being studied separately.

Clinical tests of urine concentration are concerned with order of concentration rather than absolute maximum. It appears that most people with normal renal function can be expected to concentrate their urine above 700 mOsm/kg in the period five to nine hours after IN desmopressin (40 µg). Fluid restriction is unnecessary but excessive drinking during the test entails a risk of water intoxication.⁴ Desmopressin has negligible vasopressor activity and does not evoke hypersensitivity reactions.⁵

Because the urine flow rate is greatly reduced after desmopressin we recommend that in the day test the bladder should be emptied at the time desmopressin is given. Hence if only one urine specimen is obtained in nine hours it will not have been diluted by urine in the bladder at the beginning of the test.

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Renal vein thrombosis, nephrotic syndrome, and focal lupus glomerulonephritis

The association of disseminated lupus erythematosus, nephrotic syndrome, and renal vein thrombosis has been reported in 10 cases.¹⁻⁵ In all five cases in which there were enough histological details^{4, 5} diffuse membranous glomerulonephritis was shown. It has therefore been suggested that this condition is probably similar to the idiopathic