

Desmopressin does not lead to early hypertension



UMC Utrecht

N. Uitslager, R.E.G. Schutgens

Van Creveldkliniek, University Medical Center Utrecht, The Netherlands

Introduction

The Dutch guideline 'Diagnostic and treatment of hemophilia and other hemostasis disorders' states that high blood pressure is a contra-indication for the use of desmopressin. Patients with mild Haemophilia A or von Willebrands Disease (vWD) have a life expectancy comparable to the rest of the population. As aging is associated with an increased risk in rising systolic and diastolic pressure, the aging patient group is treated with clotting factor instead of desmopressine. However treatment with clotting factor increases the risk of developing an inhibitor and the associated financial implications and patients burden are significantly higher.

Aim

To evaluate the effect of desmopressine use on blood pressure, within the first four hours in adult patients with mild hemophilia A or vWD.



Methods

From November 2010 until April 2014, 56 patients received desmopressin (0,3 microg/kg). Blood pressure was measured at the same arm before, 1 and 4 hour (h) after the infusion. ANOVA was used to compare means in the subjects at different time points.

systolic	N	mean	Std. Deviation	Std. Error	min	max
0	56	131.5000	18.51093	2.47363	101.00	178.00
1	51	127.2353	16.04318	2.24649	89.00	158.00
4	46	128.6739	15.50062	2.28544	104.00	167.00
total	153	129.2288	16.82593	1.36030	89.00	178.00

diastolic	N	Mean	Std. Deviation	Std. Error	min	max
0	57	76.6667	11.88236	1.57386	56.00	110.00
1	51	71.7647	10.89879	1.52614	48.00	92.00
4	46	71.8696	11.85019	1.74722	55.00	103.00
total	154	73.6104	11.71855	0.94431	48.00	110.00

ANOVA systolic	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	505.708	2	252.854	0.892	0.412
Within Groups	42527.285	150	283.515		
Total	43032.993	152			

ANOVA diastolic	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	845.563	2	422.781	3.166	0.045
Within Groups	20163.061	151	133.543		
Total	21010.623	153			

Results

Mean systolic value before desmopressin was 131.5 mmHg; after 1 and 4h it was 127.2 and 128.7 respectively ($p=0.41$). Mean diastolic readings before was 76.7 and lowered to 71.8 and 71.9 at 1 and 4h respectively ($p=0.045$). See above.

Post-hoc testing with Bonferroni correction showed a trend for lower diastolic values after desmopressine infusion.

Sub-analysis in 17 patients with hypertension (systolic >140 mmHg or diastolic >90 mmHg) showed a mean systolic pressure before of 155.0 mmHg; after 1 and 4h it was 141.5 and 143.4 respectively ($p=0.008$). Mean diastolic value was initially 87.9, reduced to 78.1 and 81.6 at 1 and 4h respectively ($p=0.06$). See below.

systolic	N	mean	Std. Deviation	Std. Error	min	max
0	17	155.0000	13.30413	3.22673	131.00	178.00
1	15	141.4667	11.56884	2.98706	120.00	158.00
4	14	143.3571	12.92944	3.43354	124.00	167.00
total	46	147.0435	13.83387	2.03969	120.00	178.00

diastolic	N	Mean	Std. Deviation	Std. Error	min	max
0	17	87.8824	11.07860	2.68695	70.00	110.00
1	15	78.1333	10.00619	2.58359	63.00	92.00
4	14	81.5714	13.23582	3.53742	60.00	103.00
total	46	82.7826	11.95345	1.76244	60.00	110.00

ANOVA systolic	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1732.965	2	866.483	5.416	0.008
Within Groups	6878.948	43	159.976		
Total	8611.913	45			

ANOVA diastolic	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	786.899	2	393.450	2.998	0.06
Within Groups	5642.927	43	131.231		
Total	6429.826	45			

Conclusion

Desmopressin does not lead to higher blood pressure within 4 hours of desmopressin infusion in patients with mild Haemophilia A or vWD.

In contrary, diastolic blood pressure decreased 1h after infusion and remained stable after 4h. The group with initial hypertension showed a significant decrease in systolic pressure after the treatment with a desmopressin infusion. Based on these results, hypertension does not seem to be a strict contra-indication to the use of desmopressin.

