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# American Journal of Hypertension

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AMERICAN JOURNAL OF HYPERTENSION (ISSN 0895-7061) (incorporating JOURNAL OF CLINICAL HYPERTENSION) is issued in one volume in four issues plus two special issues by Elsevier Science Publishing Co., Inc., 52 Vanderbilt Avenue, New York, NY 10017. Subscription prices per year: Institution, \$98.00; individual, \$49.00; interns and residents, \$30.00. Outside of the U.S. and possessions, please add \$16.00 for surface delivery. Second class postage pending at New York, NY, and at additional mailing offices. Claims for missing issues can be honored only up to 3 months for domestic addresses and 6 months for foreign addresses. Duplicate copies will not be sent to replace ones undelivered through failure to notify Elsevier Science Publishing Co., Inc., of a change of address. Single copy, microfilm, and back volume information available from Elsevier Science Publishing Co., Inc., upon request.

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**Repeated injection of atrial natriuretic peptide ( $\alpha$ -hANP) in normal man: cardiovascular and renal actions**

5045

J Potratz, G Müller-Esch, R Gerzer, P Ball, J Atl, and PC Scriba, *Depts. Medicine and Biochem. Endocrinology, Medical Univ., Lübeck, and Dept. Medicine, Univ. München, FRG*

In 6 healthy volunteers, 200  $\mu$ g of  $\alpha$ -hANP were given twice as an intravenous bolus injection within 30 min. M-mode-echocardiography was performed and serum levels of ANP and cGMP as well as cGMP-, sodium- and potassium excretion were determined.

After each injection, a clear-cut increase of stroke volume by 15%, ejection fraction by 16% and cardiac index by 16% was observed ( $p < 0.01$ ). Hemodynamic changes were most pronounced from 10 to 15 min after each administration and reached baseline values another 15 min later. Serum ANP rose 20fold; cGMP increased from  $3.2 \pm 1.1$  to  $25.0 \pm 6.7$  nmol/l within 10 min after the first injection and from  $20.0 \pm 6.0$  before the second administration to  $32.7 \pm 11.1$  nmol/l another 10 min later. Urinary cGMP excretion rose 9fold, urine volume 12fold, sodium excretion 6fold and potassium excretion doubled. These renal actions were still present for at least 90 min later. No severe side effects were observed.

*Conclusions:* 1. Renal effects caused by  $\alpha$ -hANP are more persistent than its cardiovascular actions. 2. Using a dosage interval of 30 min reproducible improvement of myocardial performance can be obtained by a second bolus injection. 3. The role of cGMP as a marker for ANP is confirmed.