The Relationship Of Plasma Endothelin And Testosterone Levels In Male Hypogonadism

P. Kumanov, A. Tomova, G. Kirilov, L. Dakovska, S. S. Allamaneni, A. Agarwal; Clinical Centre of Endocrinology and Gerontology, Medical University, Sofia, Bulgaria, Cleveland Clinic Foundation, Cleveland, OH

Objective: Endothelin has various paracrine and endocrine effects on the male reproductive system. Testosterone is probably responsible for the higher endothelin levels in males. In addition, there is much ambiguity about the relationship between gonadotrophic hormones and endothelin. Our objective was to study the relationship of endothelin with the hypothalamo-pituitary-gonadal axis in the male.

Design: Prospective study

Materials and Methods: Eighteen male patients with various forms of hypogonadism (7 with hypergonadotrophic hypogonadism and 11 with hypogonadotrophic hypogonadism) were recruited. The mean age of the patients was 21.72 ± 4.06 years. Eight age-matched healthy males served as controls.

Results: The basal endothelin levels in patients with hypogonadism (0.95 ± 0.53 fmol/mL) were significantly higher in comparison with the controls (0.54 ± 0.06 fmol/mL, \( P < 0.05 \)). Males with hypergonadotrophic hypogonadism had significantly increased endothelin concentrations (1.05 ± 0.57 fmol/mL, \( P < 0.05 \)), whereas those with hypogonadotrophic hypogonadism (0.89 ± 0.53 fmol/mL) had elevated levels that were not significant. Only patients with Kallmann's syndrome (\( n = 3 \)) showed significant difference as compared to the controls (1.13 ± 0.71 fmol/mL, \( P < 0.05 \)). No significant correlation was found between plasma endothelin levels and gonadotrophins, prolactin and the testosterone concentrations.

Conclusion: Our results suggest that plasma endothelin levels are elevated in men with hypogonadism especially those with increased gonadotrophins. Further research is needed to clarify whether they have any pathological role in hypogonadism or are increased as a response to pathology in hypogonadism.

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