

# ANTI-MULLERIAN HORMONE (AMH) CONCENTRATIONS AND REDUCED APPENDIX TESTIS ESTROGEN AND ANDROGEN RECEPTORS EXPRESSION IN CRYPTORCHIDISM

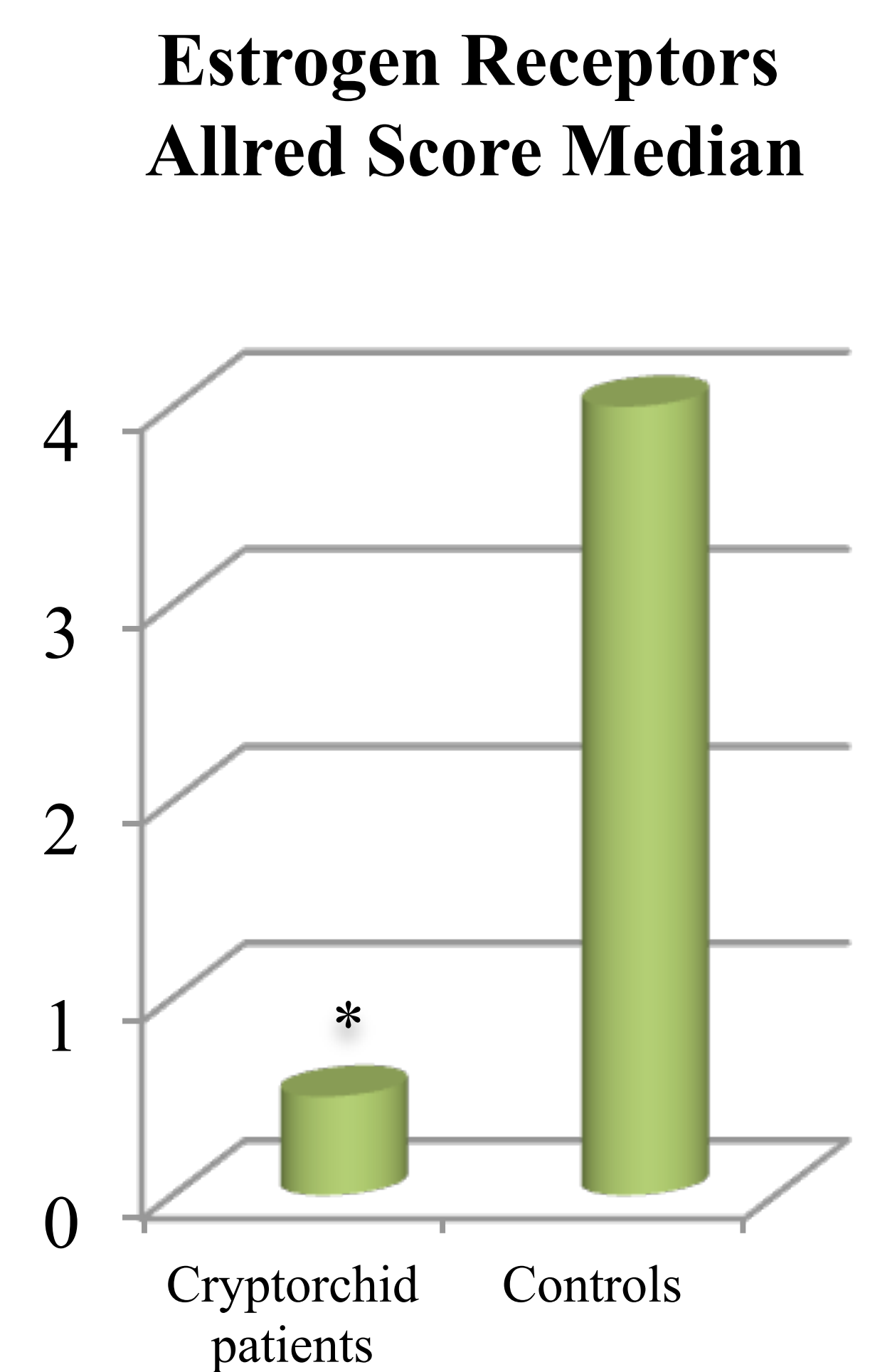
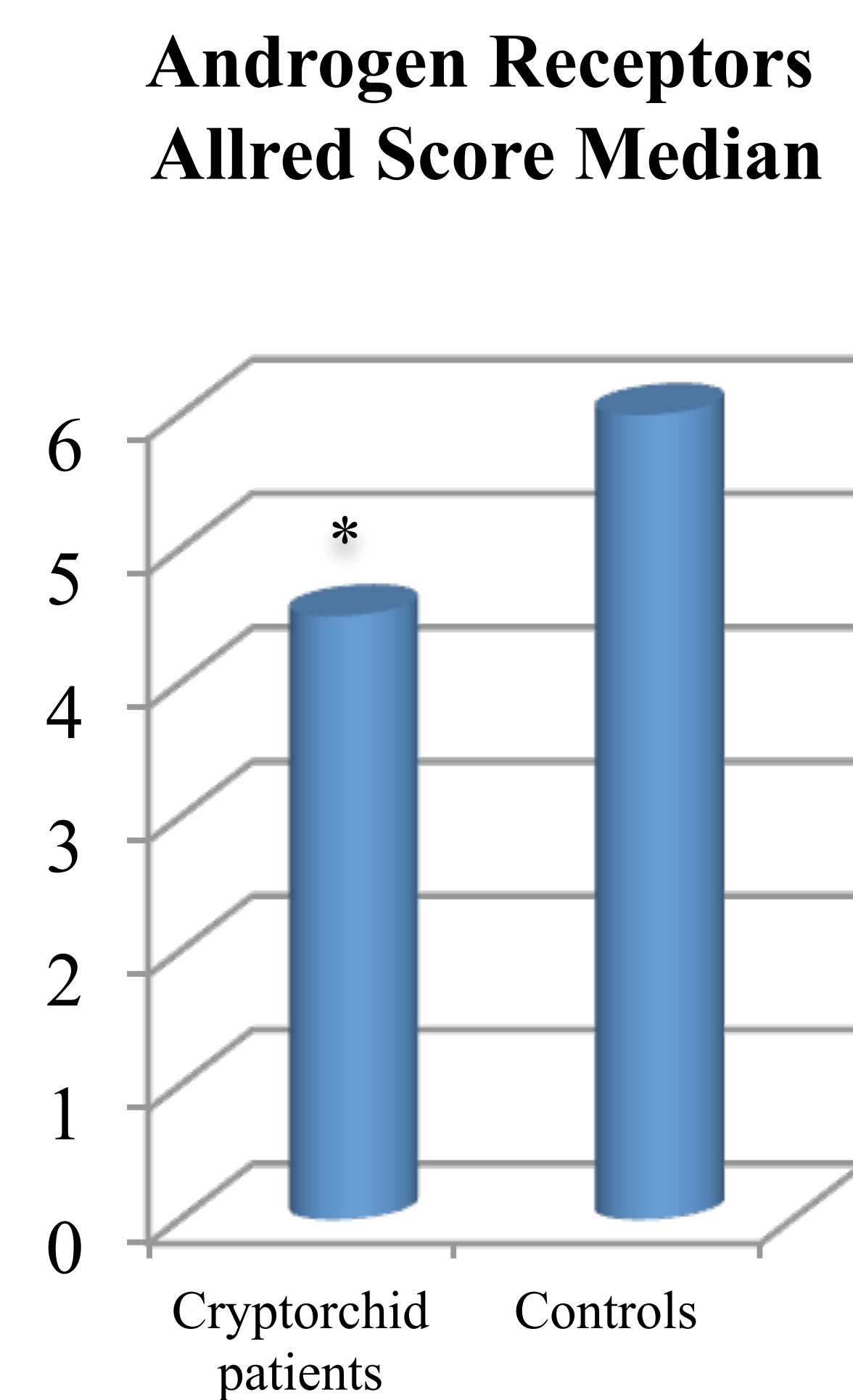
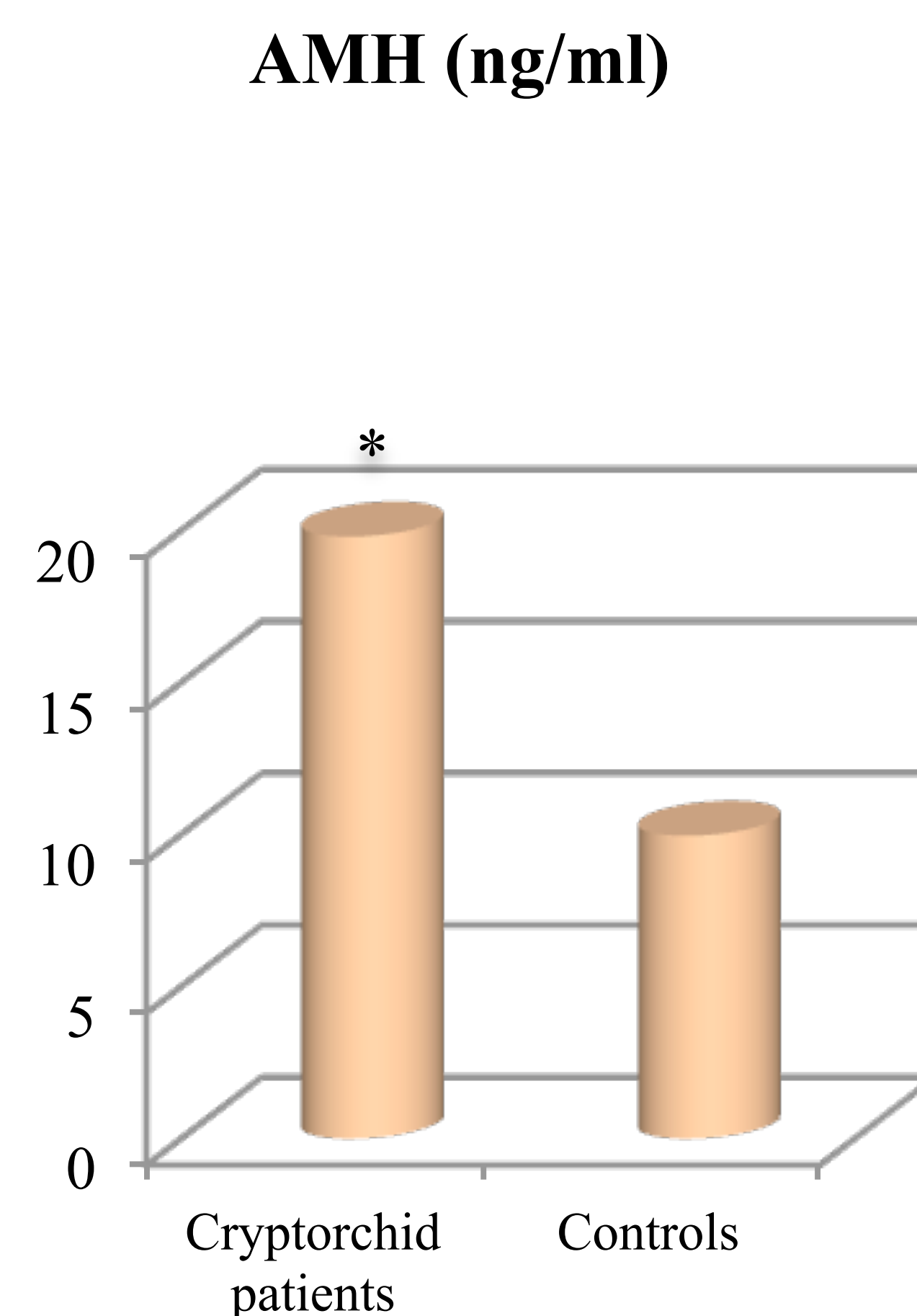
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## INTRODUCTION

AMH causes fetal paramesonephric duct regression and is involved in testicular development and function. Sertoli cell AMH remains high during childhood until puberty. The appendix testis (AT), a remnant of the paramesonephric duct, contains both androgen and estrogen receptors. AT androgen receptors have been reported to play a role in embryonic testicular descent. The AT is commonly resected during orchiopexy and abdominal surgery as possible torsion in the future may cause an acute scrotum. Our study aimed to assess AMH concentrations together with the expression of AT androgen and estrogen receptors in cryptorchidism.



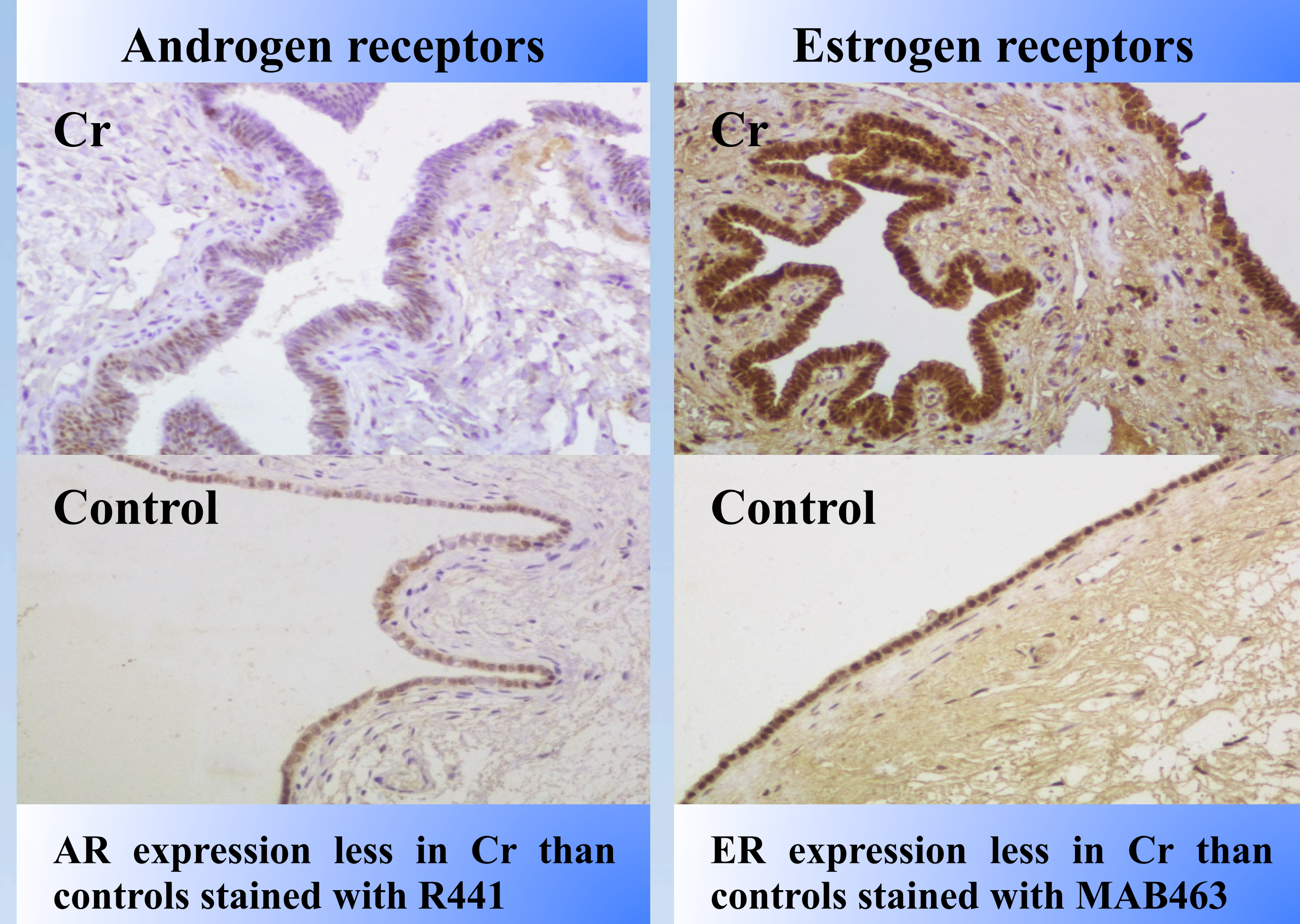
A. Higher plasma AMH concentrations in Cr\* and controls (p=0.002), B. Lower androgen receptor expression in Cr\* than controls (p=0.017), C. Lower estrogen receptor expression in Cr\* than controls (p=0.002).

## METHODS

The study included 42 boys, 21 patients with cryptorchidism (Cr) and 21 healthy control boys with orthotopic testes who underwent surgery for hydrocele. The appendix testis was surgically resected from all the boys studied.

•**Plasma AMH** was measured using a chemiluminescent enzyme immunoassay.

•**AT androgen and estrogen receptor expression** was assessed with immunohistochemistry using the monoclonal antibody R441 for the androgen receptors (left column) and monoclonal antibody MAB463 for the estrogen receptors (right column). For the estimation of the receptors' expression the Allred Score method was used. Statistical analysis was performed with Wilcoxon Signed Ranks and Spearman's (rs) tests.



## RESULTS

- (1) AMH concentrations showed statistically significant differences between patients with cryptorchidism and controls (p=).
- (2) The expression of the AT androgen receptors was also lower in patients with cryptorchidism compared to the controls (p=0.017).
- (3) Estrogen receptor expression was lower in the AT of patients with cryptorchidism compared to controls (p=0.002).
- (4) In the Cr there was a highly positive correlation (rs=0.71) between the expression of the estrogen and androgen receptors (p<0.001).

## CONCLUSIONS

Our study suggests that there is an higher plasma AMH concentrations in cryptorchidism. It is also of interest that the expression of the androgen and estrogen receptors of the appendix testis was significantly lower in the patients with cryptorchidism compared to the controls. Our results suggest that the expression of not only the androgen receptors as previously reported but also the estrogen receptors may possibly play an important role in the descent of the testes to the scrotum.

## REFERENCES

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