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DRAMATIC SUPPRESSION OF SERUM PROSTATE SPECIFIC ANTIGEN AND HUMAN GLANDULAR KALLIKREIN BY ANTI-ANDROGENS IN MALE TO FEMALE TRANSSEXUALS.

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Prostate specific antigen (PSA) and human glandular kallikrein (hK2) genes are regulated by androgens through the androgen receptor and they are mainly produced by the male prostate. In this study we examined whether serum PSA and hk2 levels change significantly after anti-androgen treatment in male to female transsexuals, ages 21-52. Both serum PSA and hK2 were measured with highly sensitive immunofluorometric procedures capable of detecting down to 1 or 6 ng/L of PSA or hK2, respectively. We have studied 10 men treated with cyproterone acetate only (group 1), 15 men treated with estradiol patch plus cyproterone acetate (group 2) and 33 men treated with ethinyl estradiol plus cyproterone acetate (group 3). We had serum samples before the initiation of treatment as well as at 4 months and for the third group at 12 months post-treatment.

The table below summarizes the changes in serum PSA and hK2 in the 3 groups of patients.

Table I. Changes of Serum PSA and hK2 Post-Treatment*

			Median PSA (ng/L)			Median hK2 (ng/L)		
Group	Size	Treatment	pre	4 months	12 months	pre	4 months	12 months
1	10	CA	331	35	--	216	28	--
2	15	Patch + CA	272	41	--	201	17	--
3	33	EE + CA	301	25	11	193	6	8

CA: Cyproterone Acetate; P: Estradiol patch; EE: Ethinyl Estradiol

*all changes were highly significant compared to pre-treatment values by Wilcoxon rank sum test ($p < 0.001$)

These data clearly demonstrate that there is dramatic downregulation of serum PSA with either cyproterone acetate alone or cyproterone acetate combined with an estrogen. This report provides the first evidence that serum PSA and hK2 can be dramatically reduced in healthy males post-cyproterone acetate treatment. These data may have implications when anti-androgens are used for prostate cancer therapy since serum PSA and hK2, due to their downregulation, may not accurately reflect disease burden.