

# *Insufficient mineralocorticoid dose as a predictor of TART development in boys with CAH*

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**Background:** Testicular adrenal rest tumor (TART) is the one of the main causes of decreased fertility in men with congenital adrenal hyperplasia (CAH). TART may occur in childhood, but there is no currently identified factors influencing the development of this condition.

**Objective :** To study the effect of disease control parameters of the compensation of CAH in the development of TART in children and adolescents with CAH.

**Method:** We studied 41 patients with salt-wasting form (SW) of CAH aged 9.9 [5.7; 13.4]. TARTs have been detected in 30% CAH patients (9/41) aged 13.2 [10.2; 15.9]. CAH patients were divided into 2 groups according to TART development. In each group we divided the 3-year period before investigation into three 1-year intervals (0-1, -1-2, -2-3) and calculated the average concentration of serum 17-OHP, ACTH and plasma renin activity.

**Results:** We have found higher levels of plasma renin activity during one year before investigation in patients with TART. In addition, patients with TART was significantly less determined the level of plasma renin activity (1.0 [0.0;1.0] vs 2.0[2.0; 3.0]; P=0.022). Analysis of the 17 OHP, ACTH during the year before the survey and over the long-term (two or more years from the time of the survey) did not reveal differences between patients with and without TART (Table 1).

Renin plasma activity in patients with and without TART during one year before investigation

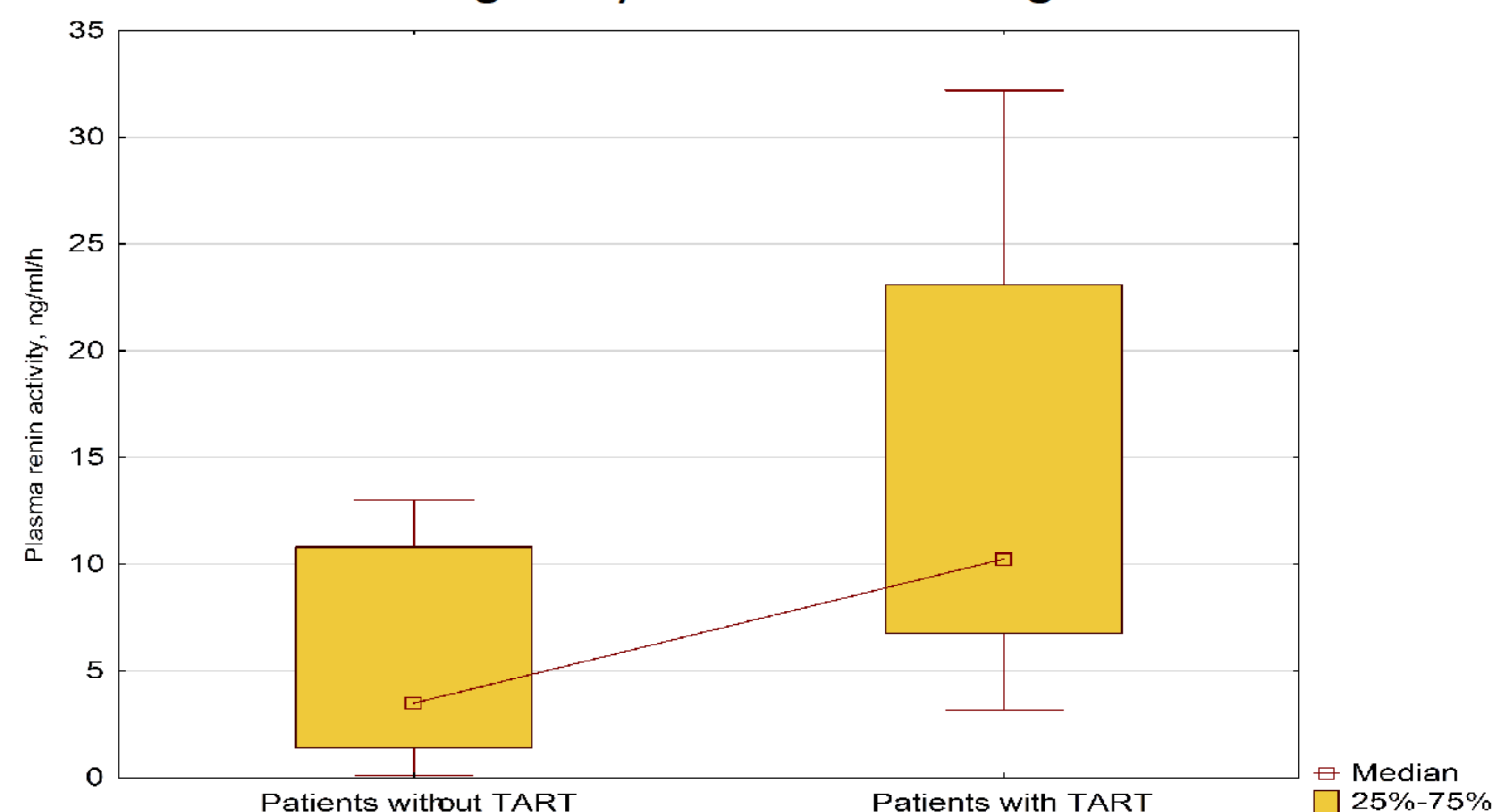


Table 1

		0 -1 year before investigation			-1 -2 year before investigation			-2 -3 year before investigation		
Patients		ACTH, pg/ml	17-OHP, nmol/l	PRA, ng/ml/h	ACTH, pg/ml	17-OHP, nmol/l	PRA, ng/ml/h	ACTH, pg/ml	17-OHP, nmol/l	PRA, ng/ml/h
<b>CAH without TART</b>	32	57.8 [12.01;125.3]	49.5 [6.1;150.0]	3.5 [1.4;10.8]	29.6 [6.2;51.2]	13.5 [4.1;112.5]	10.2 [2.1;20,4]	29.6 [6.2;51.2]	13.1 [5.1;36.6]	3.9 [1.7; 8.3]
<b>CAH with TART</b>	9	50.3 [33.5;89.2]	60.3 [47.1;141.5]	10.3 [6.8;23.1]	151.0 [57.2;327.4]	74.6 [6.8;197.9]	4.7 [3.7;10.5]	31.2 [5.8;60.4]	31.5 [31.0;33.0]	3.8 [3.2;4.6]
<b>p</b>		NS	NS	P=0.039	NS	NS	NS	NS	NS	NS

**Conclusion:** TART is more likely occur in children with poorly controlled treatment: lack of mineralocorticoids is a predisposing, but not the only factor for the development of this condition.