

Pantothenic Acid: Its Metabolic Effects in Normal Children

By

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Pantothenic acid, both as a drug and a constituent of coenzyme A, has formed the subject of several studies [3, 6, 7, 8, 9], but little is known about its metabolic effect in healthy humans, especially children [1, 2, 4, 5]. This has made us to study the effect on some metabolic processes of oral pantothenic acid treatment for 6 days in children from 3 to 13 years of age.

TABLE I

Assay	No. of Subjects	Change on pantothenic acid treatment			P value
		Increase	Decrease	Unchanged	
Serum protein	17	5	11	1	0.20 < P < 0.50
Serum albumin	16	11	4	0	0.20 < P < 0.50
Serum alpha ₁ globulin	15	5	9	1	0.20 < P < 0.50
Serum alpha ₂ globulin	15	3	12	0	0.05 < P < 0.10
Serum beta globulin	15	4	11	0	0.20 < P < 0.50
Serum gamma globulin	14	6	8	0	P = 0.50
Non-protein nitrogen	13	4	5	4	P = 0.50
Serum pyruvic acid	9	7	1	1	0.05 < P < 0.10
Serum cholesterol	9	4	5	0	P = 0.50
Serum sodium	10	3	6	1	0.20 < P < 0.50
Serum chlorine	10	6	2	2	0.20 < P < 0.50
Serum potassium	10	5	5	0	P = 0.50
Serum magnesium	9	3	4	2	0.20 < P < 0.50
Coeruloplasmin activity	8	5	3	0	0.20 < P < 0.50
SGOT	6	4	2	0	0.20 < P < 0.50
Haemoglobin	8	6	2	0	0.20 < P < 0.50
RBC	9	7	2	0	P = 0.50
ESR	9	5	4	0	P = 0.50
17-ketosteroid excretion	5	4	1	0	0.20 < P < 0.50
Thorn's test	3	0	0	3	
Body weight	10	4	2	4	P = 0.20

The drug in the form of pantenol (Bepanthen*) was administered in doses of 100 mg t. i. d. The children were well developed, and had a normal basal metabolic rate. They were kept in bed during the examination period and all of them were made to eat an identical standard mixed diet. They received no drug apart from the pantothenic acid. Assays were done on the 1st and 7th days, in the morning on an empty stomach. The results are shown in Table I. As seen in Table I none of the examined values underwent a significant change under the effect of pantothenic acid treatment.

* Kindly supplied by Hofmann—La Roche Co., Basel, Switzerland.

This must mean that the drug does not interfere with metabolism in normal healthy children. The situation of course is different in the case of pantothenic acid deficiency, when substitution treatment causes deep changes in the metabolic processes.

SUMMARY

The effect of oral pantothenic acid administration for six days has been studied in healthy children 3 to 13 years of age. No significant change has been caused in the blood constituents, SGOT and coeruloplasmin activity, 17-ketosteroid excretion, the result of Thorn's test and body weight.

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