

SEATO Clinical Research Study on Nutrition and Metabolism

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GENERAL INFORMATION

The project "Clinical and Biochemical aspects of Beri-beri" has been under study during the period covered in this report. The study has been conducted on patients admitted to the Siriraj Hospital and presenting the clinical manifestation of Beri-beri.

STUDY REPORT

1. Title: "Clinical and Biochemical Studies of Beri-beri in Infants and Adult"*

Principal Investigators:

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Objectives

To correlate clinical manifestations of beri-beri with the level of urinary thiamine and erythrocyte transketolase before and after treatment with Vitamin B. Normal levels of urine thiamine and erythrocyte transketolase in Thai subjects will also be determined.

Description

Patients who are suspected of having beri-beri, are selected for study. Approximately 10 to 20 normal subjects will also be studied in the same manner and will serve as controls.

Routine history and physical examination were performed and recorded on all subjects. Dietary history was taken in detail, and signs and symptoms of nutrition deficiency diseases were carefully evaluated, according to the ICNND Manual for Nutrition Surveys⁽¹⁾. Laboratory examinations included routine urine and blood, chest x-ray, electro-cardiogram and were also obtained.

Twenty-four hour urine samples were collected on admission and after the thiamine administration. The samples were preserved by acidification with Hcl. Determination of urine thiamine was accomplished by thiochrome method, as described in the Manual for Nutrition Surveys⁽¹⁾. Urine creatinine was determined using auto analyzer.

Blood specimens were obtained on admission and periodically after thiamine administration. Erythrocyte transketolase activity was measured by the method of Brin⁽²⁾

Progress

Thus far, only three patients have been studied. All of them came to the Siriraj Hospital because of pitting edema, fatigue on slight exertion and parasthesias. The results of Erythrocyte transketolase activity demonstrated elevated transketolase 76, 85, and 40 percent on admission to the hospital; then decreased to 5, 0, and 1 percent respectively one hour after administration of 100 mg thiamine intramuscularly. Clinical improvements, including weight loss etc. were also noted after the therapy. Subsequent ETK activity studies disclosed lower than normal values (20% stimulation) according to ICNND⁽³⁾ standards.

The urine thiamine determination are in progress. No conclusions can be drawn at present time.

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