## SEATO CLINICAL RESEARCH ON BLADDER STONE DISEASE


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### GENERAL INFORMATION

Bladder stone disease is the most common surgical problem among inhabitants of North and Northeast Thailand. According to Unakul([1]) 26,101 patients were treated in hospitals for urinary calculi between the years 1953 and 1959. Of these, 82% were vesical calculi predominately in children.

Previous studies from our laboratory have demonstrated that bladder stone disease is commonly found in children under 5 years of age who live in rural areas of North and Northeast Thailand([2]). Subsequent studies showed that oxalcrystalluria was often found in urine samples from villages and relatively rarely in samples from city inhabitants([3]). Significantly lower urinary inorganic phosphate concentration and 24 hour excretion values were found in village newborns and infants as compared with city values([4]). Subsequent studies on the effect of orthophosphate and fat—free powdered milk supplementations on urine composition showed that when phosphate was administered orally to village infants, the oxalate crystalluria disappeared([5]). It was also found that the oral orthophosphate supplement induced a significant decrease in urinary oxalic acid excretion([6]).

Further studies were carried out to find the possible source of oxalic acid and the possible role of phosphate on oxalate matabolism. The studies included various oral supplementation (hydroxyproline, serine and glycine) and analysis of amino acid content of glutinous rice. In addition intravenous pyelograms were studied in bladder stone patients who were admitted to Ubol Hospital during the period of 1967 and 1968. From this study, it is hoped to learn about the incidence of stones in other sites of the urinary tract besides the urinary bladder and of congenital anomalies of genito—urinary tract.

During the period, two papers were published as follows:

1. Compositions of Waters from Ubol Province, Bangkok and Surrounding Areas. Journal of the Med. Ass. of Thailand 51:653, 1968
2. Studies of Bladder Stone Disease in Thailand. Am. J. Clin. Nutr. 22:218, 1969

### REFERENCES


1. Unakul, S.: Urinary stones in Thailand, a statistical survey. Siriraj Hosp. Gaz. 13:199, 1961
2. Halstead, S.B. and A Valyasevi: Studies of bladder stone disease in Thailand. III. Epidemiologic studies in Ubol Province. Am. J. Clin. Nutr. 20:1329, 1967
3. Valyasevi, A., Halstead, S.B. and S. Dhanamitta: Studies of Bladder Stone Disease in Thailand, VI. Urinary Studies in Children, 2—10 years Old, Resident in a Hypo— and Hyperendemic Area. Am. J. Clin. Nutr. 20:1362, 1967
4. Valyasevi, A. and S. Dhanamitta: Studies of Blodder Stone Disease in Thailand. VII. Urinary Studies in Newborn and Infants of Hypo— and Hyperendemic Areas. Am. J. Clin. Nutr. 20:1369, 1967
5. Dhanamitta, S., A. Valyasevi ond R. Van Reen: Studies of Bladder Stone Disease in Thailand. IX. Effect of Orthophosphate and Fat—Free Powdered Milk Supplementations on the Occurrence of Crystalluria. Am. J. Clin. Nutr. 20:1387, 1967
6. Valyasevi, A., S. Dhanamitta and R. Van Reen: Studies of Bladder Stone Disease in Thailand. X. Effect of Orthophosphate and Nonfat Dry Milk Supplementations on Urine Composition. Am. J. Clin. Nutr. 22:218, 1969