BODY OF REPORT

SEATO Medic Study No. 97	Hepatitis in Military Personnel and Their Dependents.
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	Division of Medical Research Laboratories
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Objective: The objective of this study is to demonstrate any lesions which may occur in the mucosa of the small intestine in patients with acute viral hepatitis and to study the pathogenesis of hepatitis in a military population which may be compared with the civilian population being studied in SEATO Medic Studies No. 92, 93 and 94. The presence of nonspecific kidney lesions and alterations of the mucosa of the small intestine were first came to our attention in a newsletter

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from the Walter Reed Army Institute for Research in early 1964 (1). This report stimulated our study. A short time later, another group of workers (Astraldi et. al.) (2), reported marked villous atrophy and inflammatory changes in the jejunal mucosa. Shortly after this, Conrad et. al's report on American Servicemen who contracted hepatitis in Korea appeared, (3,4). These reports did not become available to us until November of 1964 because of the delay of medical literature reaching Thailand.

Description: Patients are selected for the study by the Internists of the Royal Thai Army Hospital. Those selected are patients with jaundice and a provisional diagnosis of hepatitis. As soon as these physicians feel that it is safe to do liver and intestinal biopsies, these procedures are carried out. At the same time, clinical laboratory studies and liver function tests are performed and serum is obtained for carotene levels. Xylose absorption tests are also being done. In a few patients, follow up biopsies have been obtained but in the majority of patients, this study remains to be done.

Progress: Studies have been started on 40 patients, 36 of these were reviewed for a preliminary report presented at the Annual Meeting of the Thai Division of the International Academy of Pathology (5). In this group of 36 cases, 25 acceptable cases with complete studies were present. Clinical correlations were not attempted for this preliminary report and have not been completed.

All of the biopsies of the jejunal mucosa show some degree of jejunitis. The disease wasclassified as mild to minimal in 5 cases, in 11 cases moderate, and in 9 cases the changes were judged as severe. The most severe jejunitis tended to appear in biopsies obtained earlier in the disease. There did not appear to by any correlation between intestinal parasitism and degree of jejunitis. The intestinal parasites encountered in these 25 cases were: Hookworm - 7 cases, Endamoeba coli - 2 cases, Strongyloides - 1 case, Trichuris - 1 case.

In 16 patients, there was significant alteration in the villous pattern as judged by microscopic examination. In 3 cases, there was very marked villous atrophy, with flattening and thinning of the mucosa. In 8 cases, the change was felt to be only moderately severe and in 5 cases, it was judged to be mild. In 17 cases, there was appreciable edema of the tips of the villi. This change was more apparent in cases were atrophy was less marked. In 18 of the cases, there were increased numbers of goblet cells in the epithelium and in 7 cases, this change was marked. Nodules of lymphoid tissue were present in 10 cases among the 25 cases found acceptable for the study. Among the 11 cases which were unacceptable for this study for various reasons, there were 7 nodules of lymphoid tissue. Also in 17 cases biopsied for the study of the effects of parasitic infection of the jejunal mucosa, 6 nodules were encountered.

From the study of Sprinz et. al., it is known that the mucosa of the jejunum of Thai persons of lower socio-economic groups shows a sprue-like histologic picture and that absorptive defects are common (6). It was recognized when the

study was begun that there would be difficulties in interpretation of changes in the mucosa because of the prevalence of enteric bacterial and parasitic infection in Thailand. The reactions we have described are probably all nonspecific reactions of the intestinal mucosa, which would result from many agents. Whether the changes exist before a viral hepatitis occurs cannot be determined at present. Most of the men have been returned to their units but follow-up will be done to determine whether there is return to a more normal histologic pattern.

Summary: Studies have been started on 40 patients and 25 of these patients have been found to have acceptable liver and jejunal biopsies. Preliminary examination of the pathologic material has been completed.

Conclusions: None at this time.

REFERENCES

1. WRAIR Topics, No. 2, Page 3. February 1964, Walter Reed Army Medical Center, Washington, D.C.

2. Astraldi, G., Grandinin, U., Poggi, C., Strosselli, E.: Intestinal Biopsy in Acute Hepatitis, Am. J. Dig. Dis., 9: 237, 1964.

3. Conrad, M. E., Hartman, R. S., Astraldi, G.: The Gastrointestinal Lesion in Viral Hepatitis, Ann. Int. Med., 60: 723, 1964.

4. Conrad, M.E., Schwartz, R. D., Young, A. A.: Infectious Hepatitis - A generalized disease, A study of renal, gastrointestinal and hematologic abnormalities, Am. J. Med., 37: 789, 1964.

5. Nye, S. W., Chitchang, S., Bhamarapravati, N., Bhodhidatta, P., Punyagupta, S., Yamyim, A., Sangkasuvan, V., Juttijudata, P.: Preliminary Observations in a study of Small Bowel Mucosa in Hepatitis. Annual Meeting, Thai Division International Academy of Pathology, February 1965.

6. Sprinz, H., Sribhibhadh, R., Gangarosa, E. J., Benyati, C., Kundel, D., Halstead, S.: Biopsy of Small Bowel of Thai People with Special Reference to Recovery from Asiatic Cholera and to an Intestinal Malabsorption Syndrome, Am. J. Clin. Path., 38: 43, 1962.