

FINAL REPORT

Title Page

Project 3A 025601 A 811, Military Medical Research Program S.E. Asia

Task 01, Military Medical Research Program S.E. Asia

Subtask 01, Military Medical Research Program SEASIA (Thailand)

Study: Diarrhea in U.S. Troops Newly Arrived in Thailand
(SEATO Medic Study No. 62)

Name and Address of Reporting Installation:

US Army - SEATO Medical Research Laboratory,
APO 146, San Francisco, California

Name of Department:

Department of Bacteriology and Immunology

Period Covered by the Report: 1 July 1962 - 31 December 1962

Professional Authors:

Lt. Col. Sidney Gaines, MSC
Lt. Col. Robert B. Giffin, Jr., MC

Reports Control Symbol: RCS-MEDDH-288

Security Classification:

Unclassified

ABSTRACT

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In September, 1962, the First Battle Group, 35th Infantry, was airlifted to Thailand to replace the First Battle Group, 27th Infantry, which had been in that country since May, 1962. The arrival of these troops provided this laboratory a unique opportunity to study the incidence and etiology of diarrhea in a group of men from the time of their entry into an area where diarrheas are endemic until their departure. Rectal swabs were taken on the men immediately upon their arrival, and they were observed for the development of gastrointestinal upsets during the time they remained in Thailand. Rectal swabs were taken from those individuals coming down with diarrhea. A surprisingly small number of cases of clinical diarrhea occurred in the troops, and a total of only 48 specimens were received for culture. These yielded relatively few enteric pathogens.

The low incidence of diarrhea was attributed largely to the effective mess discipline practiced. It was concluded that troops may remain relatively free of diarrhea even in an area of high risk, if adequate mess discipline is maintained.

BODY OF REPORT

Project 3A 025601 A 811, Military Medical Research Program S.E. Asia

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Subtask 01, Military Medical Research Program SEASIA (Thailand)

Study: Diarrhea in U.S. Troops Newly Arrived in Thailand
(SEATO Medic Study No. 62)

Description:

To investigate the incidence of diarrheas developing in a group of U.S. soldiers entering into an area where diarrheas are endemic.

Progress:

In September, 1962, the First Battle Group, 35th Infantry, was airlifted to Thailand to replace the First Battle Group, 27th Infantry, which had been in that country since May of that year. The arrival of these troops provided this laboratory a unique opportunity to study the incidence and etiology of diarrhea in a group of men from the time of their entry into an area where diarrheas are endemic until their departure. The troops were debarked in the vicinity of Korat, a city of approximately 40,000 population about 125 miles northeast of Bangkok. Baseline information on the types of enteric bacteria in the newly arrived troops was ascertained by taking rectal swabs from the men immediately following their debarkation from the airplanes which ferried them in. Two or three plane-loads of troops arrived each day for a period of 10 days, and during this time a total of 1487 men were examined.

Two of the men were found to harbor Group E Salmonella. The remainder showed the usual intestinal flora, including Escherichia, Proteus, Alkaligenes, Aerobacter, and Pseudomonas species. Non-agglutinating vibrios were isolated in a few instances.

During the ensuing three months (the period the troops remained in Thailand) the men were observed for the development of gastrointestinal upsets, and rectal swabs were taken from those individuals coming down with severe or mild diarrhea. A surprisingly small number of cases of clinical diarrhea occurred in the troops (according to information received from the Medical Officers of the hospital and dispensaries servicing the troops), and a total of only 48 specimens were received for culture. Only one Group G Salmonella species, one Shigella sonnei 1, one Shigella flexneri 3, and two Providencia were isolated from these specimens. Two Escherichia coli cultures were found to be enteropathogenic

types (O119:B14 and O25:B19), but were not considered significant because of the age level of the individuals involved. The remainder of the organisms consisted of Proteus, Pseudomonas, paracolon bacilli, and a variety of coliforms. Several non-agglutinating vibrios belonging to Heiberg groups I, II, and V also were cultured.

Prior to the departure of the troops from Thailand, a random sampling of the men was made to determine whether any had developed asymptomatic bowel populations that included species of Salmonella or Shigella. Rectal swabs were obtained from 301 men. In only one instance was a Salmonella species (Group G) isolated, and in one other case, an enteropathogenic E. coli strain (O25:B19) was found. Paracolon bacilli, coliforms, and Proteus species made up the bulk of the remaining isolations.

Clinically, the diarrheas appearing among the men were relatively mild. The number of stools per day in the group of 48 men on whom specimens were obtained varied from 1 to 12, with a mean of 5 per day. Low grade fever lasting from 1 to 3 days was reported in only 7 patients, except in one case where the temperature rose to 104°F during a period of 2 days. In another individual, a slight febrile reaction (99.0 to 99.3°F) was observed for 9 days. Vomiting was seen in 14 individuals and consisted usually of one or two episodes. Blood was noted in the stool of one individual, and mucus in the stools of 7 patients. No other noteworthy symptoms were reported.

The low incidence of diarrhea in the 35th Infantry was probably due to the fact that most meals were taken in troop messes, with relatively few meals being eaten in local food establishments. Food preparation and handling in troop messes were done by U.S. personnel, while locally hired mess employees were utilized for cleaning and other activities not involved in preparation of food. In another study done by this laboratory, a survey of normal Thais in the Bangkok area showed that approximately 12 percent harbored Salmonella species. It is reasonable to assume that a similar carrier rate existed in the local population in the vicinity of Korat. Thus, it is probable that the incidence of diarrheas in men of the 35th Infantry would have been considerably higher had the local population been used as food handlers.

Another factor which undoubtedly played a role in the low incidence of diarrheas in the group of soldiers studied was the absence of itinerant food vendors near the encampment. In contrast, many such vendors had set up food establishments in the vicinity of 27th Infantry bivouac area, and this group of soldiers had experienced much diarrhea.

Summary and Conclusions:

During the Fall of 1962 an opportunity arose to investigate the development of diarrheas in a group of U.S. soldiers entering Thailand, where enteric disease is endemic. The men were observed from the time of their entry into Thailand until their departure. A surprisingly small number of cases of clinical diarrhea occurred in the troops, and relatively few specimens were received for culture.

The low incidence of diarrhea in the personnel of the 35th Infantry was a reflection of the sanitary and hygienic disciplines employed in the troop messes, and of the food discipline shown by the men themselves.

It was concluded that troops may remain relatively free of diarrhea even in an area of high risk, if adequate mess discipline is maintained.

List of Publications:

A detailed report of this study is being prepared for publication.