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STUDIES OF INFECTIOUS DISEASES AT NAMRU-2 IN TAIWAN

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13. ABSTRACT

a) Respiratory diseases. In a 3 month prospective study of Chinese army recruits (9 companies) a large epidemic of influenza (both A and B) was the overwhelming cause of respiratory morbidity. Unlike U.S. experience, adenovirus, Mycoplasma pneumoniae and rhinovirus were not associated with significant morbidity. Meningococcal prevalence increased during training (20-40%) with no significant disease.

b) Hepatitis. Thirty-six percent of 59 hospitalized children with hepatitis were associated with Hepatitis B antigen (HBag). Nine percent of 249 children without hepatitis were HBag positive. Family members of positive cases had a high prevalence of antigen. History of parenteral infections or blood transfusion were uncommon suggesting significant non-parenteral spread.

c) Scrub typhus. The first epidemic of scrub typhus on Taiwan since World War II occurred in Chinese soldiers on the east coast of the island, and was thoroughly described.

d) Venereal disease. In the US airforce personnel on Taiwan 51% of men with urethritis had gonorrhea. Nineteen percent of cases of non gonococcal urethritis were positive for chlamydia (contrasted with 3% of controls). T-strain or large colony mycoplasma did not differ between urethritis cases and controls (with or without GC).

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UNIVERSITY OF WASHINGTON
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August 25, 1972

School of Public Health and Community Medicine
Department of Epidemiology and International Health

Arthur J. Emery, Jr., Ph.D.
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Office of Naval Research
Department of the Navy
Arlington, Virginia 22217

SUBJECT: Final Technical Report for Contract Ending August 31, 1972

REFERENCE: Contract Number: N 00014-68-C-0217

Dear Dr. Emery:

During the period of this contract, investigations were carried out in the following areas of infectious disease:

a) Respiratory disease. A prospective study of 9 Chinese army recruit companies followed for overlapping periods of 3 months showed that an outbreak of influenza during which both type A (Hong Kong 68 like strains) and type B organisms were isolated was the largest single cause of morbidity. Specifically, adenoviruses, Mycoplasma pneumoniae and rhinoviruses could not be associated with significant morbidity. Meningococci were found in the nasopharynx of 20% of recruits cultured at the beginning of their training period and up to 47% of recruits at the end of the training period. Group B, X and untypable organisms predominated. No group C meningococci were found. The presence of meningococcal organisms could not be associated with any disease.

In Taipei, school absenteeism was found to increase in 3 of 6 schools monitored concomitant with a widespread outbreak of influenza associated with A_2 Hong Kong isolations. Monitoring of a pre-paid 70,000 governmental employee outpatient clinic for respiratory illness showed that this December 1969 outbreak was the largest from 1969-1972.

b) Hepatitis. A hospital based study of 59 hepatitis cases in children showed 36% associated with hepatitis B antigen (HBag) as determined by complement fixation. Twice as many boys as girls were HBag positive. Of 249 children without hepatitis and normal SGPT levels, 9% were HBag positive. Family members of both groups of children had high rates of antigenemia: 74% and 54% of siblings under 15 of the HBag positive children with and without hepatitis respectively were positive for HBag, all with normal transaminase levels. Of the adults from the corresponding families 39 and 18% were HBag positive. Less than 50% of all persons studied gave a history of receiving a parenteral injection within the previous 6 months, suggesting non-parenteral spread of hepatitis B.

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c) Scrub typhus. The first epidemic of scrub typhus on the island of Taiwan since World War II was documented in a group of Chinese soldiers re-claiming abandoned agricultural land on Taiwan's east coast, near Hualien in October, 1970. Of 21 men hospitalized with suspected scrub typhus were found to have antibody in titers of 1 to 640 or greater by an indirect immunofluorescence test. Five men had typical black eschars and six others had compatible healing lesions. Six of 6 rodents trapped in the area in which the soldiers had been working with Trombiculid mites (Leptotrobmidia deliense) had Rickettsia tsucsugamushi isolated from either the rodent spleens or the mites. Retrospective questioning of non-hospitalized men from the same company as those hospitalized showed a high correlation of history of fever within 3 months with the presence of scrub typhus antibody at a titer of 1:40.

d) Venereal disease. At a U.S. airbase with a single dispensary, men with urethritis as proven by discharge seen at the dispensary or with pyuria on 365 occasions were cultured along with 90 asymptomatic individuals with normal urinalyses. Urethral swabs or discharge was cultured for large colony and T strain mycoplasma, Chlamydia or TRIC organisms, viruses and Neisseria gonorrhea. Fifty-one percent (51%) of men with urethritis had gonorrea which was almost invariably accompanied by thick, copious discharge. Of the remaining cases of urethritis, 19% were positive for Chlamydia. None of the asymptomatic control cases had urethral swabs positive for GC and only 3% were positive for Chlamydia. Rates of isolation of other organisms studied, including Herpesvirus hominis and cytomegalovirus (under 3%) T strain mycoplasma (55%) and large colony mycoplasma (40%) were equal from urethritis cases with or without GC and from controls.

Isolation rates of these organisms from bargirls and Chinese women attending a university gynecology clinic were GC 6% and 2%, Chlamydia 5% and .6%, CMV 3% and 13%, herpes 1% and .6%, large colony mycoplasmas 32% and 20%, and T strain mycoplasmas 40% and 49%.

To date there have been 3 publications in the period of the contract, but others are currently in preparation. Reprints of the publications are attached.

1. Detels, R., Kim, K.S.W., Gale, J.L., and Grayston, J.T.: Viral shedding in Chinese children following vaccination with HPV-77 and Cendehill-51 live attenuated rubella vaccines. Amer. J. Epidem. 94:473-478, 1971.
2. Gale, J.L.: Acute gastorenteric infections: their epidemiology and reported incidence in Taiwan. Proceedings of 7th SEAMEO Tropical Med. Seminar on Infect. Dis. of Gasterointestinal Systems in Southeast Asia and the Far East, 28 Sept. - 2 Oct. 1970, pp. 237-250.

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3. Gale, J.L., Wang, S.P., and Grayston, J.T.: Chronic trachoma in two Taiwan monkeys ten years after infection. Excerpta Medica International Congress Series No. 223, Trachoma and Related Disorders Caused by Chlamydial Agents, Proceedings of the Symposium, pp 490-493, 17-20 August 1970, Boston, Mass.

Sincerely,

E Russell Alexander

E. Russell Alexander, M.D.
Professor and Chairman

ERA:hgs
cc: Mr. Walter Smith
Mr. Robert Tyler
Enclosures - 3 reprints