Indochinese Refugee Health Assessment and Treatment

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Many Southeast Asian refugees have resettled in the United States. This report reviews data from 426 refugees who underwent comprehensive examination and treatment at the Mayo Clinic. Health problems identified were primarily selected contagious illnesses and stress syndromes with functional complaints. Counseling was necessary in 17 percent of adults for psychosomatic problems or psychiatric disorders. When family-planning issues were applicable and addressed, 80 percent of women chose some method of contraception. The prevalence rate of intestinal parasites was 82 percent, and pathogens necessitated persistent treatment and follow-up. Tuberculosis skin-sensitivity testing was positive in 54 percent; the risk of active disease warrants prophylactic treatment until age 35 years. Hepatitis antigen was positive in 13 percent; precautions should be taken for potentially exposed professionals.

Hematologic genetic disorders were very common and accounted for most of the 25 percent incidence of microcytosis. Physicians should become aware of cultural attitudes and treatment acceptance among Indochinese patients and should carefully investigate for infectious diseases.

About 550,000 refugees from Vietnam, Laos, and Cambodia have resettled in the United States since 1975, when flight from Southeast Asian political turmoil began. Rochester, Minnesota, is a city of about 65,000 people that has sponsored more than 700 refugees. The Mayo Clinic, a large multispecialty integrated group practice, has delivered care to most of the refugees in the Rochester community. A retrospective review of 426 Indochinese refugee patients treated from 1975 to mid-1981 was performed to summarize descriptive data of health problems and to aid in assessing the future direction of care for these patients. Prior studies focused primarily on more selected diagnostic problems. This study was undertaken to examine a broader data base including both objective and subjective health complaints.

The patient population was young (with a median age of 21 years and a range of 6 months to 72 years). There were 191 (44.8 percent) female and 235 (55.2 percent) male patients. The ethnic makeup was 208 Vietnamese, 103 Laotian, 83 Cambodian, and 32 unspecified.

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The primary care was delivered by the following departments: Family Medicine, 43.7 percent; Internal Medicine, 35.7 percent; Pediatrics, 14.5 percent; and others, 6.1 percent.

Complete immigration physical examinations were done on 90.8 percent of the refugees. The mean duration of time from registration at the Mayo Clinic to the review of the records was 424 days (1.16 years). The mean number of problem-related visits during that time was 2.5, which compares with 2.7 office visits per year for each US citizen.[1] Of the 426 patients, 61 had been hospitalized once, and 15 had been hospitalized twice—an 18.4 percent annual rate in this young population group and higher than the US annual rate of 16.3 percent.[2]

Diagnostic Data

Screening for active tuberculosis, venereal disease, leprosy, and mental disorders is required by law in refugee camps before immigration. On the basis of recommendations from public health authorities, screening protocols have been established to supplement that initial examination when refugees arrive in the United States.[3,4] At the Mayo Clinic, the routine protocol for examination of Indochinese refugees in the Division of Family Medicine is to elicit the history with the aid of an interpreter and precompleted forms and then to conduct a complete physical examination. Additional studies are as follows: hematology group, urinalysis, stools for parasites, Mantoux test, and hepatitis B surface antigen; in addition, all subjects over 21 years of age underwent chest roentgenography, and those over 35 years of age also had a blood chemistry group and electrocardiography.

Compilation of physical findings during the year between registration and review of records revealed the frequent occurrence of signs in certain body systems, primarily dermatologic (23.5 percent) and musculoskeletal (13.8 percent) symptoms. The dental abnormality rate of 20.2 percent was an imprecise quantitation because this system frequently was not evaluated by the physician. Even more impressive was the incidence of complaints by systems that did not have correlated objective findings. This category primarily represented functional problems such as headaches, abdominal pain, and chest pain. The number of complaints was tabulated by four age groups and showed a positive correlation with increasing age.

Diagnoses established on the records were then tabulated by major system grouping and compared with the percentage of US visits to a physician's office for that system. The frequency of dermatologic and musculoskeletal complaints was 22.3 percent and 17.4 percent, respectively, for the refugees as compared with 5.6 percent and 9.7 percent in the general US population. The prevalence of hypertension among the refugees was 0.2 percent compared with 15 percent in the US population, and the prevalence of diabetes was 0.4 percent compared with 2 percent in the US population. No case of chronic ischemic heart disease was noted in this refugee population. The frequency of specific diagnoses in refugees was also compared with specific reasons for US office visits (Table 1).[1,5]

Specific Health Problems

Psychiatric Counseling

Stress-related syndromes such as hypochondriasis, anxiety, and depression necessitated supportive counseling by the primary physician in 17 percent of adults and 4.7 percent of children. Formal counseling by a psychiatrist was necessary in only 1 percent of the population group, in cases that were unusually complex or difficult. A previous study of refugees showed a prevalence rate of appreciable psychiatric problems of 10 percent among adults.[6]

Family-Planning Attitudes

One of the most sensitive areas in the refugee population is the issue of contraceptive advice. The cultural background of the Indochinese emphasizes premarital virginity and modesty. Most patients have not been exposed to the philosophy of birth control because of the need for large families to replace those lost to war, starvation, and illness.[7] The Indochinese population group had an average parity of 3.6 among the mothers, who ranged in age from 16 to 72 years. In 42.7 percent of the women in whom it was applicable, contraceptive planning was not addressed. When it was applicable and addressed, 79.6 percent chose some method of contraception.

Table 1. Most Frequent Diagnoses in Southeast Asian Refugees

Diagnosis	Incidence in SE Asians (%)	US Office Visits (%)
Normal findings	21.0	7.3
Headache	8.5	1.7
Pregnancy	7.7	3.6
Upper respiratory tract infection or bronchitis	5.2	6.0
Refractive error	4.5	1.4
Back pain	4.2	1.8
Syphilis	4.2	0.06
Otitis media	3.7	1.9
Scabies	3.2	0.03
Abdominal pain	3.0	2.5

Table 2. Frequency and Eradication of Parasites in Southeast Asian Refugees

Pathogen	Percent of Patients Infected	Percent of Infected Patients Cured	Recommended Drug
Hookworm	41.2	86.9	Mebendazole
Trichuris trichiura	27.8	79.0	Mebendazole
Giardia lamblia	25.0	80.4	Quinacrine hydrochloride*
Ascaris lumbricoides	25.0	82.1	Mebendazole
Strongyloides stercoralis	18.1	77.9	Thiabendazole
Entamoeba histolytica	14.8	76.4	Iodoquinol
Dientamoeba fragilis	6.8	66.6	Iodoquinol
Hymenolepis nana	3.1	58.3	Niclosamide
Taenia species	1.4	100.0	Niclosamide
Trichostrongylus orientalis	1.2	75.0	Thiabendazole
Enterobius vermicularis	0.5	50.0	Mebendazole
Metagonimus yokogawai	0.2	100.0	Tetrachloroethylene, bephenium hydroxynaphthoate

*Furazolidone in children

Intestinal Parasites

Routine testing for intestinal parasites was performed at the time of the immigration physical examination; 82.5 percent were found to have at least one parasite, and 76.7 percent had at least one pathogen. To the authors' knowledge, this is the highest recorded frequency thus far in studies in Southeast Asian refugees.[8-12] Symptoms were absent in most patients but, when present, included abdominal pain, diarrhea, anorexia, and nausea. Table 2 lists the frequency of occurrence of various pathogens, the percentage of patients in whom posttreatment eradication was demonstrated in follow-up stools, and the drugs of choice

Table 3. Frequency of Nonpathogenic Parasites* in Southeast Asian Refugees

Parasite	Percent of Patients Infected	Percent of Infected Patients Cured
Entamoeba coli	23.6	48.1
Endolimax nana	22.9	52.7
Trichomonas hominis	15.2	46.8
Clonorchis sinensis†	12.5	38.6
Iodamoeba bütschlii	3.1	70.0
Chilomastix mesnili	1.4	66.7

*No treatment recommended
†Treat as pathogen if patient is symptomatic

for adult patients.[13-15] Infection with multiple organisms was common, up to eight being identified in some patients. Multiple drugs and courses were frequently necessary for elimination of the pathogen. Treatment of pathogenic parasites often eradicated nonpathogenic parasites (Table 3).

The human-to-human transmission of parasites is possible with protozoan pathogens such as Giardia and Entamoeba histolytica; therefore, meticulous hygienic practices were emphasized. Helminthic infections, though not a public health hazard, can be very disabling to the patient. Such infections should be treated even when climate and hygienic practices make the soil incubation portion of the life cycle of these parasitic worms unlikely.[16,17]

Tuberculosis

Screening for active tuberculosis was performed in refugee camps before immigration. In patients in whom tuberculosis was presumably active (class A), treatment was necessary before a visa could be granted. In patients at high risk for inactive tuberculosis (class B), re-evaluation was necessary on arrival in the United States.[11] This study identified five cases of active disease (1.2 percent), comparable to the incidence in other studies.[18] Evidence of tuberculosis was present in most patients, 53.5 percent having a positive tuberculin skin test. Previous immunoprophylaxis for Calmette-Guerin bacillus (BCG) should not influence interpretation, even though equivocal reactions are common.

A lifelong risk of the occurrence of active disease exists in tuberculosis-reactive patients. Activation can occur months or years after a positive test result, but the risk is greatly diminished by prophylactic treatment with isoniazid, which renders these patients noninfectious.[19] The appropriate daily dose is 300 mg for adults and 10 mg/kg for children, and administration should be continued for one year. Prophylaxis is routinely indicated in reactive patients younger than age 35 years because it decreases their risk and the tuberculosis reservoir in the general population. In high-risk groups, such as those with chest roentgenograms compatible with previous disease, household exposure to tuberculosis, or recent skin test conversion, prophylaxis to a more advanced age is often worth the risk of isoniazid-associated hepatitis.[20] Figure 1 shows use of isoniazid in patients relative to skin test and x-ray status. It reflects an original policy of prophylactic treatment to only age 21 years, if at all.

Hepatitis Surveillance

Hepatitis B is extremely common in countries of Southeast Asia. Hepatitis B surface antigen (HB_sAg) was positive (an indication of the presence of infection) in 12.6 percent of the patients, a frequency comparable to that found in other studies[3,6] and 50 times that found in the US population, in which the carrier rate is 0.25 percent. A prolonged carrier state occurs in 4 percent of adults acutely infected with hepatitis B virus.

The biggest problem is the danger to those who are innocently exposed, such as dentists and physicians during surgical or obstetric procedures. A needle stick with HB_sAg-positive blood or serum carries a risk of up to 45 percent of transmission to the exposed person.[21] Blood, serous fluid, or saliva can penetrate through the skin or mucous membranes.[22] Most of the hepatitis B virus carriers have no evidence of chronic activity, but 21.4 percent of the patients had abnormal results of liver function tests compared with 3.4 percent of the HB_sAg-negative patients. These carrier cases can be either benign or persistent hepatitis or

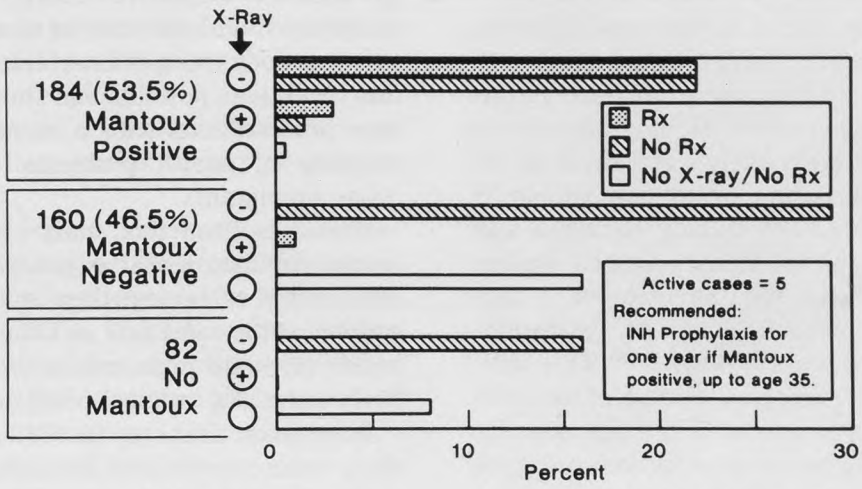

Figure 1. Surveillance and treatment of tuberculosis (INH, isoniazid)

Table 4. Results of Hematology Testing in Southeast Asian Refugees

Refugee Group	Percent of Patients			
	Anemia*	Micro-cytosis**	Erythrocyte Abnormality†	Abnormal Differential
Vietnamese	8.0	14.0	3.5	9.9
Laotian	11.8	38.7	1.2	6.9
Cambodian	12.2	30.4	6.1	12.0
Unspecified	6.9	24.0	0	9.0
Total	9.6	24.8	3.2	9.3

*Hemoglobin <11 g/100 mL in female patients and <12 g/100 mL in male patients
**Mean corpuscular volume <80 μm^3 for patients >5 years of age and <74 μm^3 for patients <5 years of age
†Erythrocyte count <4,000,000/mm^3

chronic active hepatitis, which occurs in as many as 10 percent of patients after acute hepatitis. Follow-up should be continued after liver function studies have been done to evaluate for progression or resolution of hepatitis. All refugees should have a medical identification card on which their hepatitis chronic carrier marker is noted. Infants born of HB_sAg-positive mothers should receive prophylactic hepatitis B immune globulin in the immediate neonatal period.[23]

Hematologic Abnormalities

In this study group, 10 percent of the refugees were anemic and 25 percent exhibited microcytosis (Table 4). Although the causes of microcytosis were not determined in this group of refugees, other studies have indicated that thalassemias and hemoglobin E trait are the most common causes of microcytosis in Southeast Asians.[24] Despite the high frequency of intestinal parasites, eosinophilia

was demonstrated in only 9 percent of refugees.

Microcytosis may lead to an incorrect diagnosis of iron deficiency and inappropriate treatment with iron.[24] It is important, therefore, that physicians recognize that erythrocytic microcytosis in Southeast Asians is most likely a reflection of the presence of a thalassemia or of hemoglobin E trait,[25] conditions that are usually harmless and necessitate no treatment. Many previous studies conducted in Southeast Asia have shown a very high prevalence of deficiency of glucose-6-phosphate dehydrogenase (G6PD).[25,26] This deficiency may result in hemolytic disease of the newborn or, in children or adults, in a propensity for occurrence of severe hemolytic reactions on exposure to sulfonamides or use of antimalarial drugs of the 8-aminoquinoline type (eg, primaquine). Hemolytic episodes may also be expected as a consequence of erythrocytic G6PD deficiency when refugees have bronchopneumonia, hepatitis, or other infections of either bacterial or viral cause.

Methods of Treatment

The records were reviewed with respect to the drug regimens used and the surgical procedures performed. Although no comparable statistical model could be identified in the general US population, drug usage among the refugees seemed similar to that among US patients. The high percentage of patients who underwent a surgical procedure (13.1 percent) was primarily due to extensive dental extractions.

Some refugees used native healer and self-care practices of cupping, coining, burning, and pinching along with modern medical modalities. Fear of hospitals, operations, and blood testing was common, as was the expectation of receiving a prescription.

Discussion

The recent influx of Indochinese refugees into the United States parallels many prior immigrations in history. Any turmoil of sufficient intensity to disrupt large numbers of people from their homelands can certainly cause major psychosocial difficulties. In this study, an attempt was made to examine objective health data, subjective complaints, and methods of treatment. This analysis has made recognition of the prevalence of certain conditions possible and should provide health care professionals with a more sensitive understanding of health problems among Southeast Asian immigrants.

Statistics from this study show that this is a young population that is generally very healthy. After initial screening, they utilize health care resources at the same rate as US citizens. Hospitalization rates are high, primarily because of previously untreated surgical problems.

Infectious diseases, including intestinal parasites, tuberculosis, and hepatitis, are potentially substantial individual and public health problems. Data from this study are similar to findings in other studies. Careful surveillance, comprehensive treatment, and meticulous documentation and follow-up are very important.

Hematologic abnormalities are common and necessitate specialized knowledge of causative factors of microcytosis. Special precautions with drug use and anticipation in neonatal care are necessary because of potential hemolytic reactions.

Comparison of the frequency of specific problems and diagnoses in this group of patients and in the general US population is impossible because no statistical data about the same variables have been compiled in the general population. This survey reports more of a prevalence than an incidence of disease because of the almost universally performed immigration physical examination. Certain diagnoses, however, are more common, including dermatologic, musculoskeletal, otorhinolaryngologic, and ophthalmologic disorders. In part, these findings are due to previously untreated conditions. Functional psychosomatic problems are also notable and can be ascribed to the cultural tendency to express emotional stress somatically.

Psychiatric supportive care was delivered by the primary physician in a high percentage of patients. This population has sustained an incalculable degree of stress. They were wrenched from their homeland, had arduous escape experiences, lost or left behind many family members, and have been dispersed into many locations.[27] They have exhibited considerable strength in the conquest of adversity but still suffer psychologically, as manifested by depression, anxiety, and hypochondriasis.

Communication barriers must be overcome with the help of interpreters. Sensitivity to their holistic attitudes of a person's health being dependent on family, religion, food, morality, and metaphysical forces is important. Awareness of their heritage and immigration history is likewise essential.[28]

Family-planning issues are sensitive and frequently were not discussed. This sensitivity may derive from a difference between the philosophy of the refugee population, which has primarily not been taught methods of contraception because of the perceived need for large families to replace those members who die young, and the more contemporary philosophy of population control in Western societies. When the issue was addressed, nearly 80 percent chose a contraceptive method—a definite indication of an interest and a need.

Compliance with prescribed therapeutic regimens is complicated by communication barriers. Nonetheless, these patients will follow recommendations for treatment if physician trust is cultivated by thoroughness, patience, interest, and a positive attitude.[29]

The Indochinese are a stimulating and interesting group of people who will continue to contribute more to American culture. With refugee patients, health care professionals will continue to confront difficult social and medical situations; thorough investigation and heightened awareness of the cultural background will enable physicians to deliver high-quality comprehensive care.

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