Communicable Disease in African Immigrants in Minneapolis

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Background: Despite increasing numbers of African immigrants to the United States, there is a lack of detailed information about their health problems.

Methods: Data on communicable diseases were obtained from the charts of all 102 patients who had emigrated from Africa in the last 5 years and were seen at an urban clinic in Minneapolis, Minn, during the last 7 months of 1997.

Results: Eight patients had active tuberculosis, 10 had hepatitis B, 7 trichuriasis, 2 amebiasis, 1 schistosomiasis, 1 ascariasis, 2 human immunodeficiency virus infection, and 1 malaria. All patients tested had antibodies to hepatitis A, 55% to hepatitis B, and 3% to hepatitis C. Characteristics of these patients are described.

Conclusions: Communicable diseases are common in African immigrants, often despite a healthy appearance and prolonged residence in the United States. Careful screening is warranted.

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Immigration from Africa to the United States has increased dramatically in the last decade in response to war, famine, and widespread political upheaval. Urban clinics and hospitals are seeing increasing numbers of these immigrants, who bring with them African rather than North American patterns of infectious disease. Very little has been published describing health problems of these patients after arrival. Public health statistics tend to underestimate disease prevalence because of incomplete reporting. In contrast, detailed study of a specific group can provide more accurate information, which may be useful to clinicians looking for unfamiliar diseases. We describe an investigation of all 102 immigrants, from 12 different countries in Africa, seen in 1 urban clinic during the last 7 months of 1997.

Results

One hundred two patients were seen, from 12 different countries. Fifty-seven were from Somalia; 14, Ethiopia; 6, Liberia; 6, Nigeria; 6, Togo; 5, Cameroon; 2, Kenya; 2, Zaire; 1, Egypt; 1, Libya; 1, Rwanda; and 1, Sierra Leone. Fifty-four percent were women. Median age was 32 years (age range, 17-74 years). Median duration of US residence was 18 months (range, 1-60 months).

Tuberculosis

Forty-seven (52%) of 91 patients had positive tuberculin tests. A few patients reported BCG vaccination in childhood, but most could not remember. Ten patients had chest radiographs showing parenchymal disease suggesting tuberculosis. Three of these patients had cultures negative for organisms but were considered active cases because their radiographs improved coinciding with treatment. Five patients had active tuberculosis confirmed by positive cultures for Mycobacterium tuberculosis. Three of these had extrapulmonary disease (cerebral, peritoneal, or cervical lymph nodes). One of the isolates was resistant to isoniazid only; all other isolates were sensitive to standard first-line tuberculosis drugs. Median age of patients with tuberculosis was 29 years (age range, 20-33 years); median duration of US residence when diagnosed was 8 months (range, 1-46 months). Cases were not clustered in households or countries of origin.

Hepatitis

Ten (14%) of 73 patients tested positive for hepatitis B surface antigen, 41 (55%) of 73 for anti–sickel cell hemoglobin, 61 (100%) of 61 for IgG anti–hepatitis A virus, and 2 (3%) of 59 for anti–hepatitis C virus. One of the patients with antihepatitis C virus had received an emer-
PATIENTS AND METHODS

Charts were reviewed for all patients seen from June 1 through December 31, 1997, at a teaching hospital adult outpatient clinic in Minneapolis, Minn, who had emigrated from Africa in the last 5 years. Most patients came to the clinic because it was in the neighborhood where they lived and were seeking general medical care for common problems such as hypertension, diabetes, and headaches. Composition of the clinic population was affected by referrals from the Center for Victims of Torture, and by secondary migration from other states and Canada to join the large Somali community here. The internal medicine residents staffing the clinic were encouraged to screen all immigrant patients, symptomatic or not, for tuberculosis, hepatitis, stool parasites, and other infections following public health guidelines, but testing was not mandated, and often patients did not return for scheduled tests or to bring in stool samples. Illness diagnosed before coming to our clinic is not reported herein. A tuberculin skin test was considered positive if 10 mm of induration was present (5 mm in patients with human immunodeficiency virus [HIV] infection). Chest radiographs were obtained on patients who had a positive tuberculin re-action, and 3 sputum specimens were obtained (by induction if necessary) if parenchymal disease was present, and sent to the Minnesota State Board of Health for culture and sensitivity testing. Serologic testing for hepatitis A, B, and C was performed by enzyme immunoassay; reactive samples were confirmed by neutralization (hepatitis B surface antigen), or recombinant immunoblot assay (anti–hepatitis C virus). All reactive anti–hepatitis A virus samples were tested for IgM-specific antibodies to rule out acute hepatitis. The HIV type 1 antibody testing was performed by enzyme immunoassay; reactive samples were confirmed by Western blot. Sets of 2 or 3 stool specimens were collected in formalin solution and polyvinyl alcohol and considered positive if at least 1 specimen contained pathogenic ova or parasites.

INTESTINAL PARASITES

Nine (17%) of 53 sets contained pathogens, some more than 1 (2 Entamoeba histolytica, 7 Trichuris trichiura, and 1 each Schistosoma mansoni, Ascaris lumbricoides, and Di-entamoeba fragilis), all in asymptomatic patients. Fifteen showed evidence of organisms generally considered nonpathogenic, and 29 showed no pathogens. Median age for the patients with pathogens was 31 years (age range, 20-62 years); median duration of US residence was 19 months (range, 1-36 months). Countries of origin were representative of the entire study group.

COMMENT

Two (7%) of 27 patients tested had HIV antibodies, and 1 died of the acquired immunodeficiency syndrome during the study. One patient had acute Plasmodium vivax malaria 3 months after arrival, and 1 had severe, generalized scabies. One patient had a positive rapid plasma reagin test with a history of treatment for syphilis.

Published descriptions of health problems of immigrants from Africa are few in number and not comprehensive. Existing articles are mostly from Europe, and limited in scope or not in English. The prevalence of serious illness in our patients supports recommendations that all such immigrants receive comprehensive screening, for their own benefit and for public health considerations. In general, these patients were neither malnourished nor chronically ill in appearance, and most of them had been in the United States for some time and had seen other physicians before coming to our clinic. The prevalence of hepatitis A, B, and C antibodies in this group is similar to that reported in public health studies from East Africa. The prevalence of active tuberculosis is much higher than in other reports. Our patients may not be representative of most African immigrants because so many of them were refugees fleeing war and famine (Somalia, Rwanda, or Zaire) or political oppression, imprisonment, and torture (Ethiopia, Liberia, Togo, or Cameroon). Recent African history is not reassuring, however, and we expect that similar patients will be seeking care at many US health facilities. Why were so many cases of tuberculosis missed by the screening program required for an immigrant visa, which consists of a chest radiograph in the country of origin, followed by sputum examination if the radiograph is consistent with active disease? Three were refugees who entered without a visa, hoping to obtain political asylum. One was a student, and student visas do not require a chest radiograph. Two had extrapulmonary disease with no abnormalities on their radiograph. The others were probably incorrectly classified as inactive. Why were the patients with pathogenic intestinal parasites asymptomatic, and why were so many stool tests positive in patients who had been in this country a long time? (Median length of time in the United States was 19 months in the group with pathogenic parasites and 18 months in the entire study group.) Others have reported similar findings. Only 11% of immigrants with pathogenic intestinal parasites had symptoms in one report. In another, symptoms were not more common in immigrants with parasites, and the prevalence of parasitosis did not decline with longer residence in the United States.

Few patients were able to provide a copy of the tests required for an entry visa, or of subsequent screening tests or immunizations. Some declined tests because they had been performed elsewhere, but other hospitals were usually unable to send records, owing to lack of Social Security numbers, variable name spelling, and common surnames. Not returning for
tests was another common problem; translating clinic brochures into Somali seemed to help. The following recommendations seem reasonable:

- Screen all patients for tuberculosis immediately and isolate suspected cases.
- Screen for intestinal parasites regardless of duration of US residence or whether symptoms are present.
- Do not screen for hepatitis A because IgG antibodies are nearly universal.
- Do not assume that prevalence rates or modes of transmission of hepatitis B and C follow US patterns.
- Do not rely on entrance public health examinations or on verbal reports of negative testing elsewhere.
- Perform screening tests on the first visit, which may be the only one.
- Provide written translations of patient instructions to improve compliance.

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REFERENCES