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Health Screening of Refugees in Providence, RI

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BACKGROUND

Since the Refugee Act of 1980, more than 4300 refugees have resettled in Rhode Island, including 347 in the past 2 years. Refugees are at increased risk of many infections and their vaccination status is frequently unknown. Refugees are required to complete specific health screenings and evaluation, including an intake exam, within 30 days of arrival. Medicaid insurance coverage is guaranteed for only 8 months. The disease burden, limited insurance coverage and immunization requirements for naturalization increase the importance of timely identification and treatment of conditions and completion of vaccinations.

Starting in October 2008, the Medicine/Pediatrics Primary Care Clinic (MPPCC) has worked with the International Institute of Rhode Island to coordinate the medical care of newly resettled refugees. The Refugee Clinic meets monthly and is staffed by Med/Peds residents, attendings, and nurses. The first patient encounter is a nurse visit designed to introduce the patient to the clinic, place a tuberculin skin test (TST), and to collect screening labs. Patients are then seen at a subsequent visit by residents/attendings for their initial intake physical two days later. Ideally, the same resident becomes their primary care physician, ensuring continuity of care.

METHODS

Retrospective chart review of all refugee patients with initial intake exams at the Medicine/Pediatrics Primary Care Clinic in Providence, RI, from October 2008 to October 2010. Demographic data as well as results of screening tests were collected. Data analysis generated descriptive statistics using Excel and SPSS.

RESULTS

During the first two years of operation, a total of 77 patients were seen for their initial intake exam over the course of 23 monthly scheduled Refugee Clinics.

• Regions of origin included Africa, the Middle East, and Southeast Asia, with the largest percentage coming from Bhutan (28%).

• Median age was 31 (range 4 months - 87 years), with 55% between the ages of 20-39.

• Latent TB infection was diagnosed with a TST > 10 mm in 64% of patients.

• 70% lacked definitive immunity to the hepatitis B virus (HBV) as demonstrated by negative antibody to hepatitis B surface antigen (anti-HBs). 12% of refugees had isolated anti-hepatitis B core antibody (anti-HBc) positivity . Two patients had active HBV infection with detectable viral loads.

•The majority of patients (71%) had proven serologic immunity to measles, mumps and rubella, while 4% lacked immunity. An additional 18% of patients had a previously documented MMR. No patients had documented varicella vaccination at intake and 84% had serologic immunity to varicella.

•Most patients (92%) had their stool examined for ova and parasites. 40% had stool samples that were positive for parasites, approximately 2/3 of which were potentially pathogenic. 14 patients had more than one parasite.

Regions and Countries of Origin

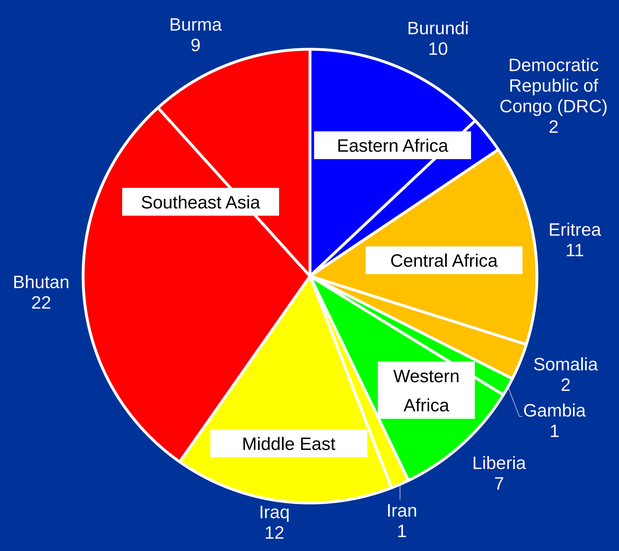

Table 1. Gender and Age

Gender	n=77	Age Range (years)	n=77
Female	41 (53%)	0-19	11 (14%)
Male	36 (47%)	20-39	42 (55%)
		40-59	16 (21%)
		≥ 60	8 (10%)

Table 2. Parasites Found in Screening Stool Specimens [a]

Potentially pathogenic	No. of patients	Nonpathogenic	No. of patients
Blastocystis hominis [b]	17	Chilomastix mesnili	3
Dientamoeba fragilis [b]	4	Endolimax nana	5
Giardia lamblia	8	Entamoeba coli	9
Hymenolepis nana	2	Entamoeba hartmanni	3
Hookworm	2	Entamoeba dispar	1
Trichuris trichiura	1	Total	21
Iodamoeba butschlii	1		
Entamoeba histolytica	1		
Total	36		

[a] 14 patients had > than 1 parasite
[b] pathogenesis is controversial

Table 3. Results of Hepatitis B Screening by Region

Hepatitis B [a]	Region of Origin: Central Africa	East Africa	West Africa	Middle East	Southeast Asia	Total No. of Patients
	n=12	n=13	n=8	n=13	n=31	n=77
Immune						
anti-HBs +, anti-HBc –	4	2	0	0	4	10 (13%)
anti-HBs +, anti-HBc+	1	1	4 [b]	0	5	11 (14%)
Unknown Immunity						
anti-HBs -, anti-HBc+	1 [c]	2 [b,c]	1	1	4	9 (12%)
Non Immune						
anti-HBs -, anti-HBc -	6	8	2	12	17	45 (58%)
Active Infection						
HBsAg +, detectable viral load	0	0	1[d]	0	1[d]	2 (3%)

[a] anti-HBs = surface antibody, anti-HBc = core antibody, HBsAg = surface antigen
[b] 1 patient with Hep B core IgM consistent with recent infection
[c] 1 patient with Hep BeAb positive
[d] patient with Hep B core Ab positive, BeAb positive, with detectable viral load

Table 4. Results of Selected Screening Tests by Region of Origin

Screening Test	Region of Origin: Central Africa	East Africa	West Africa	Middle East	Southeast Asia	No. of Patients
TST	n=12	n=13	n=8	n=13	n=31	n=77
≥ 10mm	6	6	7	7	23	49 (64%)
Not performed	1	1 [a]	0	0	2 [a,b]	4 (5%)
Stool Parasites	n=12	n=13	n=8	n=13	n=31	n=77
Positive	6	8	4	5	8	31 (40%)
Not performed	0	2	1	2	1	6 (8%)

[a] 1 patient with history of pulmonary tuberculosis previously treated
[b] 1 patient with positive QuantiFERON

Table 5. Results of Immune Status and Vaccine Documentation of Measles, Mumps, Rubella and Varicella at Intake [a]

Screening Test	Region of Origin: Central Africa	East Africa	West Africa	Middle East	Southeast Asia	Total No. of Patients
Measles, Mumps, Rubella	n=12	n=13	n=8	n=13	n=31	n=77
Immune	5	12	6	10	22	55 (71%)
Non-immune	1[b]	0	0	1[c]	1[d]	3 (4%)
Not done	6[e]	1	2[f]	2[g]	8	19 (25%)
Documented MMR Vaccine at Intake	5	1	0	0	8	14 (18%)
Varicella	n=12	n=13	n=8	n=13	n=31	
Immune	9	8	8	10	30	65 (84%)
Equivocal	0	1	0	2	1	4 (5%)
Non-immune	2	4	0	1	0	7 (9%)
Not done	1[e]	0	0	0	0	1 (1%)

[a] immunity defined per Lifespan laboratory guidelines
[b] patient not immune to measles, but immune to mumps and rubella
[c] patient not immune to measles and mumps, but immune to rubella
[d] patient not immune to mumps, but immune to measles and rubella
[e] 1 patient's age less than recommended for MMR or varicella vaccine
[f] both patients empirically given MMR and varicella vaccine on day of intake, without drawing titers.
[g] 1 patient empirically given MMR and varicella vaccine on day of intake, without drawing titers

DISCUSSION

A structured refugee clinic aids in the identification of treatable infections as well as lack of immunity to vaccine-preventable diseases. Documentation of vaccination or immunity is necessary to access education, employment, and naturalization.

Our results demonstrate that although HBV is endemic in many of the countries of origin, definitive immunity as demonstrated by positive surface antibody was low. Isolated anti-HBc positivity may indicate an occult hepatitis infection (with HBsAg below the detectable limits), loss of acquired anti-HBs, or a false positive. Many of our refugee patients are from areas with high prevalence of HBV infection. Their isolated anti-HBc likely reflects previous infection, with loss of surface antibody.

Despite high rates of immunity to measles, mumps, rubella and varicella, not all refugees were immune and could serve as source patients or susceptibles for future epidemics. Given recent outbreaks of vaccine preventable diseases both domestically and internationally it is crucial that refugees and other high risk populations are screened appropriately and receive timely immunization. Some refugee clinics have moved to empiric vaccination without checking serologic titers. An evaluation of the timeliness of delivery of required vaccines and cost-benefit analysis of empiric immunization are areas for future quality assessment. In addition, many patients had potentially pathogenic stool parasites and latent TB, both of which can be addressed to improve their health and prevent spread to the community.

Sources

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