

SERRE DELCOR AND OTHERS

HEALTH STATUS OF ASYLUM SEEKERS VISITED IN AN INTERNATIONAL
HEALTH CENTRE, SPAIN

Health Status of Asylum Seekers, Spain

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Abstract.

The rising rate of conflicts and the unsafe situation caused by reasons of ethnicity, religion, gender, sexual orientation, political opinion, or nationality entail an increase in the number of migratory movements. The goal of this article is to describe the health status of asylum seekers visited in an international health center. We conducted a retrospective study of the asylum seekers visited between July 2013 and June 2016. A total of 303 cases were included. The median age was 28.0 years (IQR: 21–35), and 203 (67.0%) were men. Of the total, 128 cases (42.2%) were from Asia, 82 (27.1%) from Eastern Europe, 42 (13.9%) from sub-Saharan Africa, 34 (11.2%) from America, and 17 (5.6%) from Maghreb. The majority, 287 (94.7%), were asymptomatic. Seventy of the 303 (23.1%) cases were diagnosed with at least one infection, this being more prevalent in men; migrants from sub-Saharan Africa; and in those who took a land-maritime migratory route. Eight of the 303 (2.6%) cases were referred to the transcultural psychiatric department. Two important challenges of the study were the communication barriers and the legal or social situation that condition the psychological symptoms. In 48 of the 303 (15.8%) cases, there was diagnosed a noncommunicable diseases. The process of care was completed by 82.5%; although 21.9% completed the vaccination for hepatitis B. The asylum seekers in this study were in general healthy young men, although special attention was given to infectious diseases with certain geoepidemiological backgrounds. Unstable living arrangements, linguistic, and cultural barriers could account for the failure of the course of care.

INTRODUCTION

The rising rate of conflicts and the unsafe situation caused by reasons of ethnicity, religion, gender, sexual orientation, political opinion, or nationality entail an increase in the number of migratory movements. According to UNHCR, forced displacements affected 65.3 million people by the end of 2015 (an increase of over 50% in the past 5 years), with 40.8 million displaced internally, 21.3 million refugees, and 3.2 million asylum applicants.¹

In 2015, in Europe, the number of asylum requests was double that of 1992, with 29% being minors and 23% of the minors being unaccompanied.² Specifically, the number of asylum requests in the European Union (EU) in 2015 was 1,321,600, of which 1% were made

in Spain (15,000). The EU countries with the most requests were Germany (476,510), Hungary (177,135), and Sweden (162,450), although most were denied.³ In addition to the dangers in their countries of origin, many of these refugees flee using dangerous migration routes.^{3,4} It is estimated that 3,771 people died in 2015 attempting to cross the Mediterranean Sea.¹ The main countries of origin of people arriving in Europe via the Mediterranean were the Arab Republic of Syria (50%), Afghanistan (21%), Iraq (9%), Eritrea (4%), Pakistan (3%), Iran (2%), Somalia (2%), Morocco (1%), and Sudan (1%).¹

Some diseases could be more prevalent in this population as a result of the characteristics of the countries of origin or transit (geoepidemiology or deficient healthcare and sanitation systems), the precarious conditions during the migratory process, or the different conditions in shelters and centers in the receiving countries.^{5,6} As for infectious diseases, different studies of immigrant populations have described elevated rates of latent tuberculosis infection (LTBI) (sub-Saharan Africans 46–71%; Latin Americans 19–47%; Asians 30–51%; and East Europeans 43–58%), positive surface antibody hepatitis B (HBsAg) (sub-Saharan Africans 9–15%; Latin Americans 0–7%; Asians 0–3%; and East Europeans 4%) and intestinal parasites (sub-Saharan Africans 3–39%; Latin Americans 2–13%; Asians 22–30%; and East Europeans 0–10%).^{7–10} Mental health is another significant challenge in this group.¹¹ A review of studies published in 2005 based on interviews with refugees residing in rich member countries of the Organisation for Economic Co-operation and Development (Australia, Canada, Italy, New Zealand, Norway, United Kingdom, and United States) shows that post-traumatic stress can be 10 times more frequent in refugees than in local populations.¹² Another study in Amsterdam revealed that frequent transfers of minors between shelters for asylum applicants led to the appearance of mental health problems.¹³ In Germany, one survey showed that the most common mental health problems referred by asylum applicants were depression (55%), anxiety (40%), and post-traumatic stress (18%).¹⁴ As for noncommunicable diseases (NCD), a study conducted in Switzerland on asylum applicants and refugees from the Middle East showed that this group of diseases was the second cause of emergency room visits: psychiatric illness (24%), NCD (10%), and infectious diseases (3%).¹⁵

Although some European institutions and societies have issued documents with recommendations on healthcare for asylum seekers, there are few studies that describe in detail the main health problems affecting recently arrived asylum applicants in Europe.^{16,17}

In 2013, a partnership was launched between the Vall d'Hebron-Drassanes Tropical Medicine and International Health Unit (Barcelona, Spain) and social agencies (public and private) that take care of immigrants in vulnerable social conditions (such as asylum seekers, homeless, or unaccompanied minors). This agreement included an initial health exam for all those who requested it, along with health education activities for immigrants and workers at the host institutions. The purpose of this study is to describe the health status of the asylum seekers who visited this center.

MATERIALS AND METHODS

A descriptive retrospective population study was conducted including all asylum seekers who requested a medical exam (with or without symptoms) at the Vall d'Hebron-Drassanes Tropical Medicine and International Health Unit (Barcelona, Spain) between July 2013 and June 2016.

According to the 1951 Refugee Convention in Geneva and the 1967 protocol in New York, an asylum seeker is a “A person who seeks safety from persecution or serious harm in a country other than his or her own and awaits a decision on the application for refugee status

under relevant international and national instruments.” Following Spanish law, once international protection is requested, the foreigner cannot be expelled until the application is resolved. In Spain, asylum-seekers, without economic resources, can benefit from social services for covering their basic needs in conditions of dignity, lawyer assistance, access to interpreters; and health care assistance.¹⁸

In Catalonia, the Spanish region where the study was conducted, asylum seekers have the same health rights as the autochthonous population. In the case of economic immigrants, immediate access to primary health is given to those who are registered in the city council and face economic scarcity.¹⁹

The visits and analyses were standardized based on national and international guidelines.^{16,17,20,21} This included medical history, physical exam and analysis depending on geoepidemiological history (migratory route and country of origin), and the presence of symptoms (Table 1). The following infectious diseases were considered in the study: endemic infections from tropical areas (malaria, schistosomiasis, filariasis, and intestinal parasites) and worldwide international infections with a high prevalence in some areas (tuberculosis [TB], human immunodeficiency virus [HIV], hepatitis B virus [HBV], hepatitis C virus [HCV], and syphilis). Vaccination was offered to individuals without immunity for HBV.

The study variables were as follows:

1. Geoepidemiological variables: gender, date of birth, country of birth, country of origin, arrival date, migration route (land-maritime or airplane), consultation request date, date of first consultation, and language in which the clinical interview was conducted (native or Spanish/Catalan). The residency time in Spain was calculated using the date of the first consultation and the arrival date. Consultation delay was calculated using the date of the first consultation and the consultation request date.
2. Clinical variables: reason for consultation, medical history, and diagnosis; indication for HBV vaccine, number of doses administered, and referral to the transcultural psychiatric service (based on the symptoms or patient request).

Hepatitis B and HCV were tested in persons coming from countries with prevalence $\geq 2\%$.^{20,21} Human immunodeficiency virus was assessed when the prevalence at the country of origin was $\geq 1\%$.²¹ In addition, given the high prevalence of sexual abuse in this population, according to some sources, those viral infections and syphilis were offered to those cases that were exposed to this situation.²² The LTBI was screened in asylum seekers coming from countries with high incidence rates of TB (≥ 20 cases/100,000 population per year), with ≤ 35 years of age who had been living ≤ 5 years in European countries with low prevalence of TB.²³ Individuals older than 35 years were not screened because the risks of chemoprophylaxis outweigh the potential benefits, unless they have a documented contact with an active case of TB.²¹ The LTBI was diagnosed using the tuberculin test (TT), and Quantiferon-TB Gold test (IGRAs) was performed in individuals with TT ≥ 5 mm or when TT could not be done. The chest X-ray was done when TT ≥ 5 mm or IGRAs was positive and when suspected symptoms were present. LTBI was considered in those cases with a normal chest X-ray and IGRAs ≥ 0.35 UI/mL (or TT ≥ 10 mm if IGRAs was not available).²⁴ Intestinal parasites are distributed worldwide, particularly in tropical area with poor sanitation conditions, and were consequently assessed based on the country of origin and migratory route.²⁵ Schistosomiasis screening was performed in cases coming from endemic countries.²⁶ Polymerase chain reaction for malaria was performed in cases coming from countries with high transmission (> 1 case per 1,000 population).²⁷

This unit has a community health service that employs community health workers who facilitate patient-provider communication in the case of linguistic or cultural barriers.

The study was carried out in accordance with the Harmonized Tripartite Standards for Good Clinical Practice, following the current national regulations (Law 14/2007 of Biomedical Research) and the Ethical principles derived from the Declaration on Helsinki. The confidentiality of the data of the subjects participating in the study is guaranteed in compliance with the Spanish Organic Law 15/1999, of December 13, on the Protection of Personal Data. This research was evaluated and approved by the Clinical Research Ethics Committee of the Vall d'Hebron Hospital in Barcelona and was conducted using clinical best practices.

Univariate analysis of our dataset included measures of distribution, central tendency (median or average if the standard deviation was $> 20\%$), and dispersion (standard deviation and interquartile range). Bivariate analysis of categorical was carried out using the χ^2 test or the Fisher's exact test for small samples. To compare continuous variables, the Student's *t* or the Mann–Whitney *U* test was used. Hypothesis testing was conducted with a 5% alpha risk and 95% confidence intervals. To that end, multiple logistic regression was performed to identify factors associated with the presence of infectious diseases in asylum seekers by gender, age, area of origin, time elapsed between arrival to Spain and consultation date, and migratory route. The statistical analysis was carried out using the SPSS 23.00[®] program.

RESULTS

Sociodemographic data.

A total of 303 asylum applicants were visited during the study period. Their median age was 28.0 (interquartile range [IQR]: 21.0–35.0), 49 (16.2) % were under the age of 18 years, and 203 (67.0%) were male. Of the total, 128 (42.2%) were from Asia, 82 (27.1%) from Eastern Europe, 42 (13.9%) from sub-Saharan Africa, 34 (11.2%) from America, and 17 (5.6%) from Maghreb (Table 2).

The median time elapsed between arrival to Spain and consultation date was 81 days (IQR: 25–256). The median delay between requesting consultation and medical assistance was 2 days (IQR: 1.0–6.0). In 115/271 (42.4%) cases, the migration route to reach Spain was land-maritime. In 93/303 (30.7%) cases, the medical interview took place in Spanish or Catalan (Table 3).

Reason for consultation.

A total of 287/303 (94.7%) cases were asymptomatic. The symptoms referred were 5/303 (1.7%) musculoskeletal, 3/303 (1.0%) gastrointestinal, 2/303 (0.7%) fever, 2/303 (0.7%) cutaneous, 1/303 (0.3%) adenopathy, 1/303 (0.3%) neurological, 1/303 (0.3%) mental health, and 1/303 (0.3%) presented abnormal results on blood analysis (a case with high glycaemia).

Infectious diseases.

At least one infection was diagnosed in 70 of the 303 (23.1%) cases. More than one infection was present in 21 of the 303 (6.9%) cases. The presence of infection was higher ($P = 0.008$) in men 56/203 (27.6%) versus 14/100 (14.0%) in women; higher ($P < 0.001$) for those who used a land-maritime migration route, and 41/115 (35.7%) versus 23/156 (14.7%) in those who traveled by air. In addition, significant differences ($P < 0.001$) in infection were also found based on the area of origin: sub-Saharan Africa 22/42 (52.4%), Maghreb 5/17 (29.4%), or Asia 31/128 (24.2%) versus America 5/34 (14.7%) or Eastern Europe 7/82 (8.5%). There were no differences according to age or time since arrival to Spain. Results from our lineal regression (LR) show that the area of origin, specifically sub-Saharan Africa with an odds ratio (OR) 7.1 and Asia with OR 3.0; gender (OR 2.3) and migratory route (OR

2.1) were responsible for a significant portion of explained variance in infections prevalence (Table 4). The most frequent communicable diseases were 29/209 (13.9%) LTBI; 26/248 (10.5%) intestinal parasites diagnosed by a microscopy examination (13 *Giardia duodenalis*, five *Enterobius vermicularis*, three Hookworms infections, three *Ascaris lumbricoides*, two *Trichuris trichiura*, two *Cryptosporidium* sp., one *Strongyloides stercoralis*, and one *Dicrocoelium dendriticum*); 11/288 (3.8%) HBsAg+; 5/287 (1.7%) HCV (quantification of HCV RNA in serum was undetectable in all cases); 3/274 (1.1%) latent syphilis; 3/269 (1.1%) HIV; 2/303 (0.7%) scabies; 2/51 (3.9%) infection by *Schistosoma haematobium*; 1/303 (0.3%) pulmonary TB. Chest X-ray was done in 120/303 (39.6%), and in three cases results were compatible with residual lesions from apparently inactive TB (Table 3).

Mental health.

Eight of the 303 (2.6%) cases were referred to the transcultural psychiatric service. Two of them had been born in Afghanistan, one in Palestine, and four in sub-Saharan Africa (Guinea-Bissau, Guinea, Mali, and Ivory Coast). All of the symptoms were characterized by high levels of anxiety, resulting in problems falling asleep, waking early, a subjective feeling of restlessness, high alertness, exaggerated ideas involving sudden concerns over their personal situation, somatic complaints pertaining to nonspecific pains (headaches, osteoarticular pain, etc.), and trembling. The diagnoses that best matched these symptoms were mixed adaptive disorder (five of the eight patients received this diagnosis), with anxiety symptoms prevailing over subthreshold depressive symptoms, two depressive episodes, and one post-traumatic stress disorder (PTSD). The PTSD case required a brief hospitalization in an acute care unit to contain the behavioral disorders exhibited, especially nervousness at night. In every case, assistance from community health workers at the center was required because of the language or cultural barriers that were present.

Noncommunicable diseases.

In 48/303 cases (15.8%), at least one NCD was present. More than one NCD was present in 18/303 (5.9%). The most common were as follows: 43/263 (16.4%) individuals ≥ 15 years of age were smokers; 18/303 (5.9%) respiratory problems; 10/303 (3.3%) cardiovascular risk factors (six hypertension and four dyslipidemia); 9/303 (3.0%) mental health or drug dependency diagnoses; 5/303 (1.7%) neurological problems; 4/303 (1.3%) diabetes; 3/303 (1.0%) other endocrinopathies, and 3/303 (1.0%) cutaneous problems.

Adherence to follow-up and vaccination.

All preliminary tests recommended by the healthcare professional were completed in 250 of the 303 (82.5%) cases. Although individuals who spoke Spanish/Catalan adhered better to the consultation schedule (88.2% versus 80.0%), we cannot rule out the role of chance in explaining such differences ($P = 0.067$).

The HBV vaccine was indicated in 192 of the 290 (66.2%) cases. Only 42/192 (21.9%) received all three doses, 66/192 (34.4%) received two doses, 42/192 (21.9%) received one dose, and 42/192 (21.9%) did not start the vaccination schedule (Table 3).

DISCUSSION

The asylum seekers who visited our center were mostly young adult males from Ukraine, the Arabic Republic of Syria, and Pakistan. The distribution based on the country of origin of our patients differs from that observed in Europe as a whole, where most asylum applicants are from the Arabic Republic of Syria, Afghanistan, and Iraq.¹ Spain ranks third in Europe among asylum applicants from Ukraine (the fourth highest nationality in the list of asylum

applicants in Europe), probably drawn by the Ukrainian community that was established in Spain in the early 1990s after the break-up of the Soviet Union.^{1,28} Barcelona has the fifth highest Pakistani population in Europe, with most Pakistanis living in the center of the city, very close to the area where the study was conducted.²⁹ The average age of the asylum applicants in our population was higher than that of official sources (76% \leq 35% versus 83% \leq 35% years).² One possible explanation is the low number of unaccompanied minors requesting asylum who arrive in Spain, 25 (0.7% of the European total) in 2015, according to official data. The countries with the most cases were Sweden, Germany, Hungary, and Austria.² Our sample's gender distribution (67% male) was similar to that reported by official sources (45–80% male).² Four of the 10 asylum applicants used a land-maritime migratory route to reach their destination (despite the risks). This percentage was even higher in immigrants from Asia and sub-Saharan Africa.

Even though most cases exhibited no symptoms (95%), an infectious disease was diagnosed in 23% of our sample. LR in our study demonstrated that area of origin, gender, and migratory route were factors associated with the presence of infectious diseases. These data seem to support the recommendation to personalize the screening protocols for infectious diseases in asylum applicants based on geoepidemiological data.^{16,17} The prevalence of LTBI (4–41%) was notable because 5–10% of the cases could turn into TB.²⁴ However, our sample's LTBI was below that observed in other groups of immigrants (19–71%).^{7–10} This study incorporates IGRAs into the screening protocol, whereas other series only consider the TT, a test that can give positive results in a population vaccinated with the BCG or infected with other mycobacteria. BCG vaccination has been available for more than 80 years and it is recommended by the World Health Organization (WHO) in newborns living in countries with high prevalence of TB. The coverage is higher than 80% of population in most countries.³⁰ In addition, the BCG scar is only present in 50% of the cases, and self-report is an unreliable source of information.³¹ Consequently, we considered everyone in our sample having the BCG vaccine. The treatment of LTBI is not without side effects, which is why some organizations recommend the use of IGRAs in this group.^{32,33} However, as IGRAs remains an expensive test, other studies recommend the use of sequential strategies (using TT and IGRAs) for the diagnosis of LTBI.^{34,35} One case of active, noncontagious TB was diagnosed (0.3%), which is the same as or even lower than the rate observed in the immigrant population in other series (0–6%).^{7–10}

The presence of intestinal parasites was similar to or lower than that observed in other migrant series (2–39%).^{7–10} We have no documented data, but a possible explanation is the availability of presumptive parasitic treatment given to asylum seekers in some countries offered by some organizations during the migratory journey.³⁶ Moreover, some centers base their parasitological diagnoses on serological techniques for two helminths (*Schistosoma* sp. and *S. stercoralis*).³⁷ However, the serology test for schistosomiasis remains positive for a long time after treatment, and thus, resolved and active infection cannot be distinguished. In addition, serology may provide false negative results, especially in cases with *S. haematobium* infection.³⁸ Therefore, this strategy could erroneously estimate the real prevalence of this helminth. Many serologic test for *S. stercoralis* are quite sensitive but could crossreact with other parasites. Furthermore, results could remain positive sometime after the treatment. However, stool examination for *S. stercoralis* requires large experience. Thus, the use of the serology is indicated in patients with eosinophilia because it is present in up to 75% of the cases with *S. stercoralis*.³⁹ However, there are different opinion on how to screen *S. stercoralis* in asymptomatic patients, without eosinophilia or risk factors for hyperinfection syndrome.^{37,40,41}

The HBsAg was present in 0–17%, similar to the rate in other migrant series (0–15%).^{7–10} The prevalence of HIV (1%) was just slightly above the rate estimated worldwide (0.8%).⁴²

Only 3% of the cases were referred for a transcultural psychiatry consultation, which hampers an assessment of the psychiatric disorders present in asylum applicants. The prevalence of mental disorders was between 0% and 4% in another study with economic migrants.⁸ According to the WHO, the overall rates of mental disorders in refugees vary substantially across different studies because of their heterogeneous background, the context and situation in the host country, and the quality of the studies.⁴³ In this study, the largest obstacle of addressing this population was the high level of difficulty in handling clinical situations that combine traumatic experiences with obvious communication barriers. Significant cultural differences and large legal/social components of migrant life often condition symptoms' progression. The WHO considers that the most important challenges providing mental health to refugees are language barriers, differences in belief systems, cultural expectations, and establishing trust.⁴³

Fortunately, community health workers from our unit assisted with most of the consultations done with these eight individuals. The presence of these workers is essential for a culturally competent approach. Such approach, however, has some unique features that warrant further consideration, such as the loss of control by the psychiatrist or the various relational dynamics that arise between the parties present at the consultation.

In general, the legal and social status of these people is the cause of their symptoms. Once the threats are resolved, the intensity of the symptoms will tend to dissipate. It could be that a number of them were able to stop their psychiatric treatments after a small number of visits.

About 16% referred a previous NCD, the most frequent involving smoking (16%), respiratory (6%), and cardiovascular (3%) disorders. Other studies showed higher prevalence of NCD among economic migrants (19–27%).^{44,45} According to the International Organization of Migration, migrants face different social determinants that expose them to more risks for their health. This situation is usually worse in women, minors, and lower skilled migrants, especially in irregular situation.⁴⁶ Many economic migrants live in this situation, which could partly explain their higher NCD prevalence compared with asylum seekers.

The rate of smoking in ≥ 15 years old migrants was lower than that reported in Spain (27–31%) and similar to that observed in other countries (Ukraine 14–49% and Pakistan 3–42%).⁴⁷ In general, our sample exhibited low rates of NCD, such as 2% for high blood pressure and 2% for diabetes in those who were 18 years and older. In the world's adult population, it is estimated that 22% have high blood pressure and 10% are patients with diabetes.⁴⁸ Another study in Germany also showed low rates of NCD in asylum applicants (cardiovascular disease 9%, pulmonary disease 6%).¹⁴ These data can be explained in part because the population is younger than the European population and because they generally have healthier life habits.⁴⁹

Around 83% (77–94% depending on area of origin) completed the visits until they received the results or, if necessary, the treatment. This is below the rate observed in other studies.^{8,10,50} Moreover, only 22% completed the vaccination schedule for hepatitis B, despite the free and effective nature of this preventive activity because one-fourth of HBsAg cases can develop into cirrhosis and liver cancer.^{51,52} One likely explanation is that the unstable status of this group during the postarrival months result in multiple residency relocations, hampering clinical monitoring.

There are some limitations for this study. First, because this was a small sample, we cannot extrapolate the study data to the entire population of asylum seekers. Second, the study center had health workers from some of the communities, which could explain why the linguistic barrier was not a significant factor in the rate at which medical appointments were kept. However, this resource was not available for some communities, such as the Ukrainian one. This barrier can lower the quality of some of the recorded data. Third, the fear that some asylum applicants had of not being accepted by the receiving country could also account for the large number of asymptomatic cases or the few cases that referred mental health problems. Finally, our screening protocols for infectious diseases were based on national and international guidelines; however, some recommendations could vary among the different sources and consequently produce different estimations on its prevalence.

In short, most asylum seekers in this study were generally healthy young men from Asia or Eastern Europe, with higher rates of infectious diseases in men from sub-Saharan Africa or Asia and those arriving by land-maritime routes. As a result, it seems appropriate to personalize protocols based on these geoepidemiological data. The rate of mental health and NCD was infrequent. Unstable living arrangements upon arriving at the receiving country could account for the failure to keep medical appointments and vaccination schedules, although linguistic and cultural barriers could also play a role.

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TABLE 1

Standardized analysis for infectious diseases in asylum seekers

Initial screening
Hemogram, leukocyte count, and immunoglobuline E.
Serum creatinine, hepatic function panel, cholesterol, and glycemia.
Urinary sediment.*
Serologies: HBsAg, anti-HBc, anti-HBs, anti-HAV, anti-HCV, TPHA/RPR, and HIV.
LTBI: TT; IGRAs in individuals with an induration of the TT \geq 5 mm; Chest X-ray for individuals with TT \geq 5 mm or IGRAs \geq 0.35 UI/mL.
Helminths and intestinal protozoa*: one stool and one urine sample for direct microscopic examination.*
Microfilaraemia*: detection of hemoparasites by microscopic examination.
Malaria*: Polymerase chain reaction <i>Plasmodium</i> and/or thick and thin blood smear
Tests conducted in case of eosinophilia or hyper IgE and negative results for helminths in the initial screening.
Three stool samples for coproparasitological study and charcoal fecal culture
Study of cutaneous filaria in the case of chronic pruritis in individuals from areas where <i>Onchocerca volvulus</i> is endemic: microscopic pinching exam (bloodless biopsy).
Search for <i>Enterobius vermicularis</i> eggs in the case of anal itching: Graham test.
Study of parasites in sputum in case of respiratory symptoms: wet mount microscopy examination, Ziehl–Neelsen stain or auramine stain.
In the case of a negative result for all direct parasitological exams, serologies*: <i>Echinococcus granulosus</i> IgG (enzymimmunoanalysis-EIA), <i>Fasciola hepatica</i> IgG + IgM (indirect hemagglutination-IHA), <i>Taenia solium</i> IgG (EIA), <i>Toxocara cani</i> IgG (EIA), <i>Onchocerca volvulus</i> IgG, IgG1, IgG2, IgG3, IgG4 (EIA), <i>Wuchereria bancrofti/Brugia malayi</i> IgG, IgG1, IgG2, IgG3, IgG4 (EIA), <i>Strongyloides stercoralis</i> IgG (EIA), and <i>Schistosoma mansoni</i> (EIA).
Other tests based on the presence of symptoms and the geoepidemiological history
Study of cutaneous filaria in case of chronic itching in individuals from areas where <i>Onchocerca volvulus</i> is endemic: microscopic pinching exam (bloodless biopsy).

Search for <i>Enterobius vermicularis</i> eggs in case of pruritus ani: Graham test.
Diarrhea: wet mount exam of feces, detection of antigens in feces for <i>Entamoeba histolytica</i> , <i>Giardia intestinalis</i> and <i>Cryptosporidium</i> , and coproculture.
Fever: QBC [®] (consider other tests to study imported fever symptoms).
Prolonged cough and fever: Ziehl-Neelsen of sputum smear.

HBsAg = hepatitis B surface antigen; Anti-HBc = antibodies to hepatitis B core antigen; Anti-HBs = antibodies to hepatitis B surface; Anti-HCV = antibody to hepatitis C; TPHA and RPR = syphilis serology; HIV = human immunodeficiency virus; LTBI = latent tuberculosis infection; TT = tuberculin test; IGRAs = Quantiferon-TB Gold Test; QBC = quantitative buffy coat.

* According to geoepidemiological history (migratory route and country of origin).

TABLE 2

Country of origin of asylum seekers (N = 303)

Geographical area of origin	Cases (%)	Country of origin	Cases (%)
Asia	128 (42.2)	Afghanistan	13 (4.3)
		Armenia	4 (1.3)
		Bangladesh	2 (0.7)
		India	2 (0.7)
		Iraq	1 (0.3)
		Iran	2 (0.7)
		Jordan	4 (1.3)
		Kuwait	1 (0.3)
		Lebanon	1 (0.3)
		Pakistan	28 (9.2)
		Arabic Republic of Syria	42 (13.9)
		Palestine	21 (6.9)
		Uzbekistan	7 (2.3)
Eastern Europe	82 (27.1)	Belarus	2 (0.7)
		Russia	9 (3.0)
		Ukraine	71 (23.4)
Sub-Saharan Africa	42 (13.9)	Benin	2 (0.7)
		Burkina Faso	1 (0.3)
		Cameroon	5 (1.7)
		Ivory Coast	4 (1.3)
		Gambia	4 (1.3)
		Guinea	7 (2.3)
		Guinea-Bissau	3 (1.0)
		Kenya	2 (0.7)
		Mali	5 (1.7)
		Niger	1 (0.3)
		Nigeria	2 (0.7)
		Central African Republic	2 (0.7)
		Senegal	2 (0.7)
		Sierra Leone	1 (0.3)
		Somalia	2 (0.7)
		Americas	34 (11.2)
Chile	1 (0.3)		
Colombia	1 (0.3)		
Dominican Republic	1 (0.3)		
El Salvador	10 (3.3)		
Guatemala	1 (0.3)		
Honduras	7 (2.3)		
Mexico	2 (0.7)		
Panama	1 (0.3)		
Venezuela	9 (3.0)		
Maghreb	17 (5.6)	Algeria	3 (1.0)
		Egypt	7 (2.3)
		Morocco	7 (2.3)

TABLE 3

Sociodemographic data, diseases, and vaccination for hepatitis B of asylum seekers visited at the Vall d'Hebron-Drassanes Tropical Medicine and International Health Unit

	Total (N = 303)	Asia (N = 128)	Eastern Europe (N = 82)	Sub-Saharan A (N = 42)	America (N = 34)	Maghreb (N = 17)
Age, years (IQR)	28.0 (21.0–35.0)	25.0 (18.3–32.8)	29.5 (24.0–37.0)	28.0 (25.0–32.5)	31.0 (15.8–36.0)	25.0 (22.0–34.0)
Men, n (%)	203/303 (67.0)	91/128 (71.1)	42/82 (51.2)	35/42 (83.3)	20/34 (58.8)	14/17 (88.2)
LMMR, n (%)	115/271 (42.4)	60/109 (55.0)	22/73 (30.1)	30/39 (76.9)	0 (0)	3/16 (18.8)
TR, days (IQR)	81.0 (25–256)	86.0 (23–251)	48.5 (28–114)	742.0 (139–2,164)	37.5 (17–145)	220.0 (93–362)
IL S/C, n (%)	93/303 (30.7)	22/128 (17.2)	10/82 (12.2)	21/42 (50.0)	34/34 (100)	6/17 (35.3)
Presence of ID, n (%)	70/303 (23.1)	31/128 (24.2)	7/82 (8.5)	22/42 (52.4)	5/34 (14.7)	5/17 (29.4)
LTBI, n (%)	29/209 (13.9)	10/95 (10.5)	2/51 (3.9)	11/26 (42.3)	2/22 (9.1)	4/15 (26.7)
Intestinal parasites, n (%)	26/248 (10.5)	17/103 (16.5)	1/62 (1.6)	5/36 (13.8)	2/31 (6.5)	1/16 (6.3)
Eosinophilia and/or hyper-IgE	51/286 (17.8)	30/124 (24.2)	7/73 (9.6)	9/39 (23.1)	4/33 (12.1)	1/17 (5.9)
HBsAg+, n (%)	11/288 (3.8)	2/124 (1.6)	1/75 (1.3)	7/41 (17.1)	1/32 (3.1)	0/16 (0)
Anti-HCV, n (%)	5/287 (1.7)	3/123 (2.4)	1/74 (1.4)	1/40 (2.5)	0/33 (0)	0/17 (0)
Syphilis, n (%)	3/274 (1.1)	1/111 (0.9)	0/73 (0)	1/40 (2.5)	1/33 (3.0)	0/17 (0)
HIV, n (%)	3/269 (1.1)	0/110 (0)	0/72 (0)	1/41 (2.4)	1/29 (3.4)	1/17 (5.9)
<i>S. stercoralis</i>	3/248 (1.2)*	0/103 (0)	1/62 (1.6)†	2/36 (5.6)	0/31 (0)	0/16 (0)
<i>S. haematobium</i> , n (%)	2/51 (3.9)‡	0/5 (0)	0/0 (0)	2/41 (4.9)‡	0/0 (0)	0/5 (0)
Pulmonary TB, n (%)	1/303 (0.3)	1/128 (0.9)	0/82 (0)	0/42 (0)	0/34 (0)	0/17 (0)
NCD, n (%)	48/303 (15.8)	22/128 (17.2)	11/82 (13.4)	3/42 (7.1)	11/34 (32.4)	1/17 (5.9)
MH assessment, n (%)	8/303 (2.6)	4/128 (3.1)	0/82 (0)	4/42 (9.5%)	0/34 (0)	0/17 (0)
Visits compliance, n (%)	250/303 (82.5)	98/128 (76.6)	69/82 (84.1)	36/42 (85.7)	31/34 (91.2)	15/17 (94.1)
HBV vaccine indicated, n (%)	192/290 (66.0)	85/125 (68.0)	65/75 (86.7)	9/41 (22.0)	23/33 (69.7)	10/16 (62.5)
0 doses, n (%)	42/192 (21.9)	13/85 (15.3)	22/65 (33.8)	1/9 (11.1)	5/23 (21.7)	1/10 (10.0)
1 dose, n (%)	42/192 (21.9)	19/85 (22.4)	12/65 (18.5)	0/9 (0)	5/23 (21.7)	6/10 (60.0)
2 doses, n (%)	66/192 (34.2)	29/85 (34.1)	23/65 (35.4)	5/9 (55.6)	9/23 (39.1)	0/10 (0)
3 doses, n (%)	42/192 (21.8)	24/85 (28.2)	8/65 (12.3)	3/9 (33.3)	4/23 (17.4)	3/10 (30.0)

LMMR = migration route; TR = time of residency; IL S/C = interview language in Spanish or Catalan; ID = infectious disease; LTBI = latent tuberculosis infection; HBsAg = surface antigen for hepatitis B; Anti-HCV = antibodies against hepatitis C; HIV = human immunodeficiency virus; *S. stercoralis* = *Strongyloides stercoralis*; *S. haematobium* = *Schistosoma haematobium*; TB = tuberculosis; HBV = hepatitis B virus; NCD = Noncommunicable diseases; MH = Mental health.

* All patients had eosinophilia and/or hyper-IgE.

† An Ukrainian patient with eosinophilia and hyper-IgE who had traveled for tourism to India 3 years before consultation.

‡ One patient from Mali with eosinophilia and hyper-IgE; and one patient from Guinea Conakry with normal eosinophil count and immunoglobulin E.

TABLE 4

Lineal regression analysis for risk factors associated with the presence of infectious diseases

Variable		<i>P</i> value	Odds ratio	95% confidence interval	
Migratory route (land-maritime)		0.042	2.058	1.026	4.132
Sex (men)		0.045	2.277	1.017	5.094
Area of origin	East Europe	–	1	–	–
	Asia	0.025	3.012	1.148	7.897
	America	0,184	2.445	0.655	9.131
	Maghreb	0.106	3.302	0.776	14.062
	Sub-Saharan Africa	< 0.001	7.132	2.394	21.062