Screening for infection in unaccompanied asylum-seeking children and young people

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ABSTRACT

We aimed to evaluate a screening programme for infection in unaccompanied asylum seeking children and young people against national guidance and to described the rates of identified infection in the cohort. The audit was conducted by retrospective case note review of routinely collected, anonymised patient data from all UASC referred between January 2016 and December 2018 in two paediatric infectious diseases clinics.There were 252 individuals from 19 countries included in the study, of these 88% were male, and the median age was 17 years (range 11–18). Individuals from Afghanistan, Eritrea and Albania constituted the majority of those seen. Median time between arriving in the UK and infection screening was 6 months (IQR 4–10 months, data available on 197 UASC). There were 94% (238/252) of cases tested for tuberculosis (TB), of whom 23% (55/238) were positive, including three young people with TB disease. Of those tested for hepatitis B, 4.8% (10/210) were positive, 0.5% (1/121) were positive for hepatitis C and of 252 tested, none were positive for HIV. Of the 163 individuals who were tested for schistosomiasis, 27 were positive (16%). The majority of patients were appropriately tested for infections with a high rate of identification of treatable asymptomatic infection. Infections were of both individual and public health significance. Our findings of clinically significant rates of treatable infections in UASC highlight the importance of infection screening for all in this vulnerable patient group.

INTRODUCTION

In 2018, 3546 unaccompanied asylum-seeking children and young people (UASC) entered the UK, under local authority care (LAC), the majority originating from sub-Saharan Africa, Afghanistan, Syria or Albania.[1] UASC are known to have complex physical and mental health needs,[2–4] including a high prevalence of many infectious diseases including tuberculosis (TB),[5] parasitic infection[6] and hepatitis B.[7] Their young age, previous experiences, separation from family and language and cultural barriers impede access to appropriate healthcare once symptomatic.[3] Health needs awareness and prioritisation is also likely to be affected by past experiences and life events, as is the ability to identify and articulate risks to which they have been exposed, compounded by increased levels of depression, anxiety disorders and post-traumatic stress.[4]

Symptomatic new arrivals may be identified either at the port of entry or at the Initial Health Assessment (IHA), which is a statutory obligation of the local authority with responsibility for the child and is usually completed within 28 days of arriving into care. Identification of asymptomatic infection requires appropriate screening of individuals and confers individual health benefits from early diagnosis and treatment of infections such as TB, HIV and hepatitis B and C as well as the potential public health benefits of reduction of risk of ongoing transmission. The responsibility to determine which tests to perform lies with the paediatrician conducting the screening, who should refer to relevant guidance.[8–11] We analysed the routinely collected clinical data from our two clinics to audit whether the national guidance on screening in these contexts was adhered to and to review rates of infection in this population.[8–11]

METHODS

We performed an audit of retrospectively routinely collected healthcare data. All UASC aged 18 years or under referred to our paediatric infectious disease clinics were included. The paediatricians undertaking IHAs in our areas routinely refer all UASC to our clinics. All UASC referred to our clinics were offered voluntary screening for infections on the basis of an individual risk assessment.

A clinical audit was registered at both sites, following advice from local research departments. Data for UASC seen between 1 January 2016 and 31 December 2018 were anonymously and retrospectively extracted from patient records into separate Microsoft Excel databases on each site. Data were recorded only by treating clinicians, and no potentially identifiable information was shared between sites. Unlinked dates of birth and genders were used to construct aggregate summaries. Where age was disputed, dates of birth supplied by the UASC were used. Country of origin and infection screening result was not linked to any demographic information, ensuring anonymity. Each site also supplied information on testing strategies as described below.

In both clinics, HIV, hepatitis B/C and syphilis testing was performed using standard serological assays. TB testing was performed using the QuantiFERON-Gold test.

Both clinics undertook screening for schistosomiasis. At clinic 1, patients were offered stool microscopy for ova, cysts and parasites. In addition, urine dipstick was performed. If this was positive for blood, or if eosinophilia was identified, schistosomiasis serology was performed. Patients with eosinophilia also had strongyloides serology performed and filarial serology if from sub-Saharan Africa.

Table 1 Country of origin of unaccompanied asylum-seeking young people seen in two London paediatric infectious diseases screening services

	Number of patients (% of total)	Median age	% male	Median length of time in UK before screening (months)
Afghanistan	55 (21.8)	16	100	6
Eritrea	51 (20.2)	17	85.7	5
Albania	35 (13.9)	17	100	5
Sudan	29 (11.5)	17	100	6
Ethiopia	25 (9.9)	17	100	5
Vietnam	23 (9.1)	17	20	6
Iraq	9 (3.6)	17	100	5
Iran	5 (2.0)	17	100	11.5
Other	20 (7.9)	17	83.3	14
Total	252	17	88.6	6

Routine serology was not performed based on country of origin alone due to the relatively high cost of the test. In clinic 2, serological screening was introduced for those from high endemicity countries part way through the audit period.

Latent TB infection was defined as positive QuantiFERON-Gold test in an asymptomatic person with normal physical examination and chest radiograph. Active TB disease was defined as a positive QuantiFERON-Gold test with supportive signs and symptoms and/or radiological evidence of TB disease. Hepatitis B infection was defined as being hepatitis B surface antigen positive on blood testing.

RESULTS

A total of 252 individuals from 19 countries attended. Of these 88% were male, both mean and median age was 17 years (IQR 16–17.2). Forty-one UASC were referred before their 18th birthday but were 18 years old by the time of screening, though still looked after within the LAC system. There were 55 (22%) from Afghanistan and 51 (20%) from Eritrea (table 1). The median time from arrival in the UK to screening was 6 months (IQR 4–11 months, data available on 223 individuals). All UASC attending clinics were offered screening. Data on referrals were available for one site only and showed 88% attended for screening.

Overall, 238 (94%) were tested for TB. Of the six untested individuals, two had declined blood tests. The reason for no testing in the others is unknown. In total, 55 (23%) were identified as having TB infection (table 2). Among those countries from which at least 10 tested UASC originated, highest rates of TB infection were seen for Ethiopia (32%), Sudan (29%), Afghanistan (28%) and Eritrea (25%). Of these, three were already known to have TB disease, all originating from Afghanistan. Two of these three had been symptomatic for over 4 months at diagnosis. The third case of TB disease was identified following clinical and radiological assessment prompted by the screening. TB infection rates did not correlate with known TB prevalence in country of origin, with a relatively high rate in those from Albania (16%) and a relatively low rate for those from Vietnam (4%).

There were 211 (84%) UASC tested for hepatitis B, C and HIV, of whom 10 (4.8%) were positive for hepatitis B, 1 (0.5%) for hepatitis C and none for HIV. Highest hepatitis B infection rates were found in those from Sudan (15%) and Afghanistan (12%) (table 2).

For clinic 1, 104 patients were from countries recognised to be high risk for schistosomiasis infection (sub-Saharan Africa). Of these, 82 had some form of testing leading to a diagnosis of schistosomiasis in 19 patients (18% of the 104 at risk). In clinic 2, 31 patients from high endemicity countries were tested by serology and 8 patients were positive (26% of the 31 at risk who were tested). The overall pick up rate for schistosomiasis in the cohort was 27 out of 163 (16%). Schistosomiasis infection in the cohort by country is shown in table 2.

There were 127 UASC tested for enteric parasitic infections (table 2), 11 (8.6%) had giardia and 9 (7%) had tapeworm infection. Many declined to provide a stool sample.

DISCUSSION

In this cohort of UASC, we found significant rates of presymptomatic, treatable infections with potential long-term health implications, including TB, hepatitis B, enteric parasitic infection and schistosomiasis. Screening was generally acceptable to our patients, but we demonstrated a significant delay between arrival in the UK and infection screening taking place.

Screening in our clinics is largely consistent with available national guidance[8–11] Recent European Centre for Disease Prevention and Control Public Health guidance on screening in newly arrived migrants recommends TB screening for those from countries with high TB incidence, HIV, hepatitis B and C screening for those from a country with a high prevalence and serological screening for schistosomiasis and strongyloidiasis for those from countries with high endemicity.[11]

Table 2 Rates of infection by country of origin in unaccompanied asylum-seeking young people

	TB infection/TB disease		Hepatitis B		Schistosomiasis		Strongyloides	
Country of origin	Number tested	Positive (%)	Number tested	Positive (%)	Number tested	Positive (%)	Number tested	Positive (%)
Afghanistan	54	15 (28)	43	5 (12)	21	0 (0)	2	0 (0)
Albania	31	5 (16)	32	0 (0)	17	0 (0)	4	0 (0)
Eritrea	48	12 (25)	43	0 (0)	42	13 (34)	4	0 (0)
Ethiopia	22	7 (32)	20	0 (0)	21	4 (19)	7	2 (29)
Iran	5	0 (0)	5	0 (0)	2	0 (0)	0	0 (0)
Iraq	8	2 (25)	9	0 (0)	2	0 (0)	0	0 (0)
Sudan	28	8 (29)	27	4 (15)	27	10 (37)	5	0 (0)
Vietnam	23	1 (4)	21	1 (5)	18	0 (0)	3	0 (0)
Other	19	5 (26)	10	0 (0)	13	0 (0)	0	0 (0)
Total	238	55 (23)	210	10 (4.8)	163	27 (16)	25	2 (8)

TB, tuberculosis.

Our results are broadly consistent with findings from other European studies. Screening of a cohort of over 2000 recently arrived UASC in Sweden found high rates of both TB infection (26%–32%) and TB disease (3.4%–3.5%), especially among those from the Horn of Africa.[5] Similarly, reports from both Italy and Germany, where large numbers of migrants and UASC have been received, identify high rates of blood borne viral infections, especially hepatitis B.[7 12] Up to 20% of all-age migrants from helminth-endemic countries have been found to have helminthic infection,[13] with rates increasing to 50% in those with eosinophilia.[14] Rates of helminthic infections with potentially serious long-term health complications vary by testing method but reach up to 12% for strongyloidiasis and 27% for schistosomiasis in some high-risk cohorts.[15] To our knowledge, helminthic infection rates in UASC in the UK have not previously been reported.

Prompt infection screening might enable early diagnosis and treatment reducing the risk of progression to symptomatic disease and potential future transmission in many infections, including TB and viral hepatitis. It is of special importance for TB, where detection and treatment of TB infection has a critically important role in reducing spread of infection from subsequent progression to TB disease. Migrants have a sustained and high risk of TB infection progressing to TB disease between 2 and 9 years postsettlement in a new country.[16] In adults, the majority of cases of TB disease in England occur in those who were born outside the UK, with rates 15 times greater than in UK-born individuals.[17] Our data, showing high rates of TB infection in young people on the cusp of adulthood, are concerning in this regard and support the need for screening and prompt treatment of TB infection in this population. We are guarded in interpreting country-specific data for infection rates in our cohort, given the small sample size, but highlight that even UASC originating from countries considered low risk appear at clinically significant risk of TB infection. Given the cases of active TB in our cohort, these findings also support the need for vigilance for healthcare workers in emergency rooms and primary care in this high-risk group.

UASC are highly vulnerable individuals, with multiple and complex health needs. These include a high prevalence of infections relating to risk factors existing in their country of origin and during their journey to the UK, evaluation of which forms part of the risk assessment. Access to healthcare is limited by language, cultural and social barriers.

The majority of UASC in our cohort who attended clinic accepted screening following careful explanation with an interpreter. We believe that testing for infections should be offered to all patients, with expert and sensitive counselling to facilitate informed consent. From our experience, intensive input by specialist nurses and streamlined care pathways and referral networks are needed to ensure attendance of this vulnerable group to clinic in a timely manner. One local authority referring to our clinics now has a dedicated liaison worker to support and advocate for appropriate healthcare for the UASC group. Ideally, though requiring significant resources, infection screening could be delivered as part of the IHA, as a 'one-stop-shop' with expert paediatric, psychological, sexual health and infection risk assessments undertaken with appropriately trained interpreters with testing performed at the same visit, thus reducing delay and multiple appointments and improving service user experience.

Our findings of clinically significant rates of treatable infections in UASC highlight the importance of infection screening for all in this vulnerable patient group. A national emphasis is needed on the funding and development of cohesive, effective services, optimising both outcomes and patient experience, for this vulnerable patient group.

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