

# Are medical laboratories ready for the diagnosis of parasitic diseases?

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## ARTICLE INFO

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## ABSTRACT

Economic instability, destabilisation with armed conflagration, religious and ethnic conflicts are the most important driving factors for migrations towards Europe. Mediterranean countries are important route for refugees who emigrate from the Middle East, Africa and Asia.

Viral, bacterial, parasitic and fungal diseases carried by these refugees constitute a significant health risk in Mediterranean countries.

Parasitic diseases, such as intestinal parasites, pediculosis, scabies, lymphatic filariasis, schistosomiasis, malaria and leishmaniasis, which may reach the Mediterranean region through migrations, were briefly reviewed and the precautions to be taken were mentioned.

It is of utmost importance that laboratories in the Mediterranean countries pay particular attention to parasitic infections, especially by using experienced staff and appropriate diagnostic methods in combating such infections.

The diagnosis and screening of all these infections among the refugees can be done by some basic parasitological laboratory methods such as direct methods for stool samples (direct wet smear, concentration methods, permanent stains, special stains), methods

for blood samples (thick and thin blood films, blood concentration procedures), direct methods for urogenital specimens, serological methods, molecular methods and rapid diagnosis kits. These methods can be easily learned by laboratory employees.

We suggest that migratory related infections study group should be established in Mediterranean countries, which should inform each other by sharing their findings and observations with officials in congresses and symposiums, and should cooperate on this issue and prepare training and workshop programs and health education programs in these countries should be updated about the health and risk factors of refugees.



## 1. INTESTINAL PARASITES

Parasitic diseases that do not require any intermediate hosts or vectors and are directly transmitted to humans such as Enterobiosis, hymenolepiosis, giardiosis, amoebic dysentery can be found in almost every area and every society in the world.

In order for these diseases to become widespread, people must be in a collective presence or in close contact. These diseases spread easily and even constitute epidemics in places like schools, factories, prisons, refugee camps, temporary tent camps that people live together during a war and nursing homes.

Amoebiosis, one of the most important intestinal parasitic diseases in the world, is seen in 10% of the world population and 40 million people die each year from this disease. Giardiosis has been reported in 200 million people worldwide. Other than these parasites, Strongyloides species are one of the most important intestinal parasites that should be considered in the refugee populations. *Ascaris lumbricoides*, *Trichuris*

*trichura*, hookworms and *Taenia* species need to be kept in mind as well (1).

## 2. PEDICULOSIS

Every year over 100 million cases of pediculosis are reported in the world. In the United States, head lice are found in 6-12 million children aged between 3 to 12 years each year. In studies conducted on at least 1000 students in various countries of the world, it has been found that; 49% of the students in France, 20% in Israel, 25% in England and 37% in Nigeria have been subjected to head lice (2,3).

Pediculosis spread easily and even constitute epidemics in places such as schools, factories, prisons, refugee camps, temporary tent camps during the war and nursing homes (4,5).

## 3. SCABIES

Scabies is a common disease of the world and can be seen in every age, race, region, climate and social fraction. In particular, it is noteworthy that the frequency of the disease increases in autumn and winter seasons when people have to live together and decreases in summer seasons. Sporadic or epidemic occurrences may be seen while every individual shows a different resistance to scabies.

Scabies is responsible for confined epidemics nowadays but still it is one of the important diseases that may create epidemics for the countries that receive large amounts of refugees in the recent years. It is known that the number of people infected with scabies tends to rise where people have to live together (6,7).

## 4. VECTOR BORNE DISEASES

**There are four important tropical diseases associated with refugees which can cause epidemics in Mediterranean countries.**

#### 4.1. Lymphatic filariasis

In Mediterranean countries, mosquito species which are vectors of lymphatic filariasis are commonly found in many countries. New foci of lymphatic filariasis may be formed in Mediterranean countries through people migrating from endemic areas or people staying in these areas during their migration process (8,17).

#### 4.2. Schistosomiasis

Among migrants, especially those who complain of hematuria should be carefully examined in terms of schistosoma. It should be noted that intermediate host snails can be found in some Mediterranean countries. Special efforts should be made in order to prevent the spread of the currently controlled disease. Schistosomiasis is seen in northern parts of Syria, near the border to Turkey (9,10,17).

#### 4.3. Malaria

Vector mosquito species are common in all Mediterranean countries. Considering that some countries have autochthonous cases, special attention should be given to combat malaria in these countries and immigrants should be screened in terms of Plasmodium species via laboratory tests (11).

#### 4.4. Leishmaniasis

Visceral and cutaneous leishmaniasis are present in some of the Mediterranean countries while vector Phebotomus species have a wide distribution in the region. Syria, which has the biggest number of refugees nowadays is one of the top countries in the world for cutaneous leishmaniasis prevalence. For this reason, laboratory tests must be done carefully to screen for the visceral and cutaneous leishmaniasis among immigrants. In addition, resistance to meglumine antimonate (Glucantime) which is used in the treatment of cutaneous leishmaniasis in the Middle East, has been reported. If resistant cases

can not be detected in time and the number of cases as well as areas increase, the fight against this disease will be very difficult and problematic (12-17).

### CONCLUSION

It is important that the laboratories in the Mediterranean countries specifically address this issue, especially in the case of parasitic infections by utilising experienced personnel and appropriate diagnostic methods to combat these infections. Gastrointestinal parasitic infections, Scabies and Pediculosis which can be transmitted directly between humans in places where people are living with the refugees and where there is a lack of hygiene, can cause epidemics in these countries. Unless necessary measures are taken, Malaria, Leishmaniasis, Lymphatic filariasis and Schistosomiasis, which are among the most important tropical diseases in the world and are encountered in the geographical paths where refugees live and migrate, can create new foci and epidemics in the Mediterranean countries.

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