

Are migrants from Middle East carriers of multi-resistant bacteria?

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Original Articles

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Submitted: 28.6.2016

Revised: 13.8.2016

Accepted: 8.9.2016

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Key words:

Migrants, Refugees, ATB resistant.

Key message:

Refugees and Migrants arriving from Middle East do not represent a significant reservoir of multi-resistant bacteria.

CSWHI 2016; 7(3): 10–13; DOI 10.22359/cswhi_7_3_02 © 2016 Clinical Social Work and Health Intervention

Abstract:

Background: In 2015 about 1.2 million migrants via the Balkan Route (Greece to Austria and Germany) and about 250,000 migrants via the Sicily (Lampedusa) Malta Route entered the EU.

Patients: Among 544,310 migrants in our field hospitals and checkpoints (Austria, Slovenia, and Greece) from Sept. 2015 to June 2016,

bacterial isolates from patients with respiratory symptoms were obtained and 209 isolates were tested with available antibiotics.

Results: Only 4 Methicillin Resistant *Staphylococcus aureus* MRSA (4%) and 1 Penicillin Resistant *Pneumococcus* PRP we isolated from migrants with symptomatic respiratory infections.

Conclusions: Our small research compared to our expectations did not find any major resistance patterns colonizing or infecting migrants coming to the EU via the Balkan route from Syria, Iraq via Greece to Austria and Germany.

Introduction

Discovery of the NDM-1 “travel” from India to Sweden, or MCR-1 genes coding colistin resistance from China to Europe are examples how multi-resistant bacteria from the 3rd World may enter EU countries, even with strict ATB policy specially via conflict areas or migration (1.2). Middle East and Southeast Asia are leading areas of the last large refugee event (Balkan and Mediterranean Route) whereas 1.35-1.5 million migrants and or refugees crossed the Greek or Italian Mediterranean border in 2015 (3-4). The aim of this short communication is to assess the risk of transfer or MR bacteria (5) within migrants in 2015/2016 from Middle East/Near East countries to the EU and dissolve the fear that refugees/migrants must be necessary carriers (6) of multi-resistant microbes or deadly diseases (6-9).

Patients and Methods

12 Healthcare Workers (HCW) have been serving at the Nickelsdorf/Hegyeshalom (AT/HU) and Dobova/Rigonca (CRO/SL) on 8 hour shifts, serving for 2 - 16,000 migrants per day. The Health Posts and Field Hospital on Austrian, Hungarian, Slovenia borders were opened since September 6, 2015 to March 2, 2016. In the six month period (9/2015 - 2/2016) about 319,500 migrants and or refugees crossed our Healthcare units, most, 90% of them healthy or not seeking medical care. About 29,500 (5,000 per month, 150 - 200 per day) presented themselves to one of our new facilities requiring healthcare and or therapy.

Results and Discussion

Concerning the spectrum of migrants 68% were from Syria, 21% from Iraq and 11% from other Asian countries. (Afghanistan, Pakistan). **Table 1** shows the commonest diagnoses. The majority had surprisingly little tropical, but “civilization” and “stress related” diseases, such as hypertension, coronary heart disease, neurovascular; diseases include decomposed diabetes, asthma, depression, etc., and camping related disorders (pneumonia, infected wounds, etc.). Only about 10% were infections, similar to those we can see in Central/Eastern EU members states Hungary and Slovakia.

From 528 cases of lower respiratory tract infections (L-RTI), we obtained swabs from the oropharynx and nose and in 101 samples pathogenic yeasts or bacteria (**Tab 1**) we isolated. Antibiotic resistance was minimal and did not show any major threat to the host population. Only 1 penicillin-resistant *Pneumococcus*, 4 methicillin-resistant *Staphylococcus aureus* (MRSA) and 1 multidrug-resistant (MDR) gram-negative bacteria (*Klebsiella* spp., resistant to all antibiotics including colistin (**Table 1**) were isolated.

All *Candida albicans* are susceptible to fluconazole (FLU) but 3 of 7 non-*albicans* *Candida* spp (*C. tropicalis*, *C. glabrata*, *C. krusei* etc.) were FLU resistant. Surprisingly all *H. influenzae* strains are susceptible to ampicillin and all *S. pyogenes* were susceptible to erythromycin.

Conclusion

In conclusion, despite the increasing number of migrants and or refugees via the „Balkan Route“, in contrast to those who are coming via Italy and Malta, our research found only a small proportion (1-4%) of multi-resistant bacterial isolates from the respiratory tract among our group of predominantly Syrian and Iraqi migrants.

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Tab. 1 Etiology and antimicrobial resistance of respiratory tract isolates in migrants with symptomatic L-RTI travelling on the Balkan Route from Sept 2015 to Feb 2016 (6 months period)

Spectrum of 101 throat/nose isolates

- *Moraxella catharralis*: 12
- *S. aureus*: 16 (4 MRSA - 25% of all *S. aureus*, and 4% from all isolates)
- Other Streptococci: 8
- *S. pyogenes*: 4
- *H. influenza*: 6
- *S. pneumoniae*: 8 (1 penicillin resist., 12.5%, of *S. pneumonide*, and 1% of all isolates)
- *Enterobacteriaceae*: 16 (Multi-resistant 1 strain, *Klebsiella pneumonia* 6.25% of all ENT, 1% of all isolates)
- *Ps. aeruginosa* : 5
- *Acinetobacter baumannii*: 2
- *Candida albicans*: 14
- Non-candida spp.: 7
- Other: 3