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Commentary

Travel, infections, and the importance of networking in the global health perspectives

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The paper by Grobusch et al. [1], published in this issue of the journal, provides unusually rich data on imported infectious diseases in Europe over a 20-year period, observed by clinical sites belonging to EuroTravNet, the European surveillance sub-network of GeoSentinel. Over 100,000 patients were included. Most were travellers, while about 10% were immigrants. The analysis includes patients seen until 2018, well before the onset of COVID-19 pandemics. Somehow, the data acquire thus a historical value, as nobody knows how traveling will be affected in the future by this scourge.

Not surprisingly, *Plasmodium falciparum* malaria was one of the most frequently observed infections with over 5000 reported cases and the leading cause of death. Dengue was the second most frequent febrile infection. The breakdown by geographical region is indeed most informative. Malaria was, expectedly, almost exclusively a problem of travellers to (or immigrants from) Africa. In no other continent (except for Oceania) malaria figures among the ten leading causes. Dengue predominates in travellers from Oceania and South East Asia, remains among the top five in Central – South America and the Caribbeans, while is much less frequently reported in the rest of Asia and does not even appear among the 20 most frequent diagnoses from Africa.

Arboviral infections (dengue, chikungunya, zika) have constantly increased over time and are of particular concern given the potential for autochthonous transmission in Europe. Outbreaks of chikungunya have already occurred in Europe [2–4]. Dengue has also caused several autochthonous clusters, the most recent ones in the Netherlands ex-France in July [5] and in Veneto region in August 2020 (first ever

reported dengue outbreak in Italy) [6]. Other more uncommon viral infections, but of great clinical concern, were captured by sentinel surveillance, among those: yellow fever, viral haemorrhagic fevers, Japanese encephalitis, all rare but with increasing trend.

Mortality has been low, also presumably owing to clinical expertise in rare infectious diseases in referral centres. Of note, the only death occurred below the age of 30 years concerned a child who died after traveling within Europe, the cause presumably being tick-borne encephalitis acquired in Germany.

Two neglected parasitic diseases appear among the top 20 diagnoses from South America (Chagas Disease) and sub-Saharan Africa (schistosomiasis, the 6th most frequent diagnosis from that area), mirroring the growing number of immigrants from endemic areas and also of clinical centres in the network dealing with immigrants, particularly in Spain and Italy.

Indeed, this large retrospective cohort inevitably suffers from biases resulting from different diagnostic skills and different reporting habits. Just as an example, looking at supplementary tables (a valuable source of detailed information), *Blastocystis* infection is invariably in the top ten list of all continents. However, this exceedingly common intestinal protozoon is questioned by most as a pathogen, and the decision to report or not this infection is undoubtedly different across centres.

Many of the infections reported are by no mean rare globally, but are so in Europe. Presumably most travellers and migrants are seen outside referral centres by physicians who are inexperienced. European networks of referral centres may certainly play a role in capacity building of clinicians who may be exposed to unusual, travel-related infections.

Recently, a feasibility study evaluated the establishment of a European expert network on rare communicable diseases linked to mobility and globalization (EURadMoG) [7]. As part of this study, a consultation workshop was conveyed in Barcelona with experts in rare communicable diseases to discuss the options for a potential European network with a focus on health care provision. Such network could complement others already established in the field of travel medicine/global health, such as EuroTravNet, but also TROP-NET [8], (a platform for collaborative research on travel-related infections) and EVD-LabNet [9], (European Expert Network of laboratories working on tools for early detection and surveillance of (re)emerging,

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rare and imported viral diseases in the EU/EEA). The three networks were all represented at the above mentioned workshop.

Indeed, the provision of highly specialized diagnosis, treatment and care for patients who have complex infections can be a challenge due to the scarcity of expertise. As a way of example, the evolution of the COVID-19 pandemic is affecting the European countries with different levels of severity [10]. Although this is by now exactly the opposite of a rare disease, it remains a novel emerging infection unknown to most health professionals. Establishing a proper system for sharing information and encouraging potential collaborations across European countries would be highly desirable.

In this view, European networks covering different aspects of emerging infections represent an invaluable opportunity for providing a better quality of care across Europe.

Contributors

ZB wrote the first draft of the manuscript. ARM contributed writing the draft. DB revised the draft critically.

Declaration of Interests

ZB is TROPNET Coordinator. DB and ARM declare no conflict of interest.

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