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## Editorial

## COVID-19 in special populations

Since the onset of COVID-19 pandemic, we have learned that certain populations deserve different approaches to various aspects of the pandemic. These aspects may include increased risk of exposure (e.g. people who live or work in congregate settings), higher risk of transmission (e.g. children), increased risk for severe disease and death (e.g. immunocompromised and elderly patients), lower availability of vaccines (e.g. people who live in low-to-medium-income countries, migrant populations), or lower immunogenicity in response to vaccines (e.g. immunocompromised and elderly populations). Results of clinical trials evaluating therapies or preventive measures for COVID-19 are likely not applicable for these populations [1].

In this theme issue, we aimed to provide a closer look at some of these populations—to define the challenges related to COVID-19 in each population, present available data to address these challenges, suggest solutions, and highlight knowledge gaps related to the pandemic among specific populations. When choosing the populations to discuss in this issue, we tried to present populations with various trajectories in the pandemic. Experts in infectious diseases, microbiology and immunology, internal and family medicine, and community health sciences participated in this issue.

Fabreau et al. [2] review COVID-19 prevention approaches for migrant populations through the fascinating example of meat processing plant workers. The authors discuss the unique features of migrants' working environment and its association with increased risk of infection with SARS-CoV-2. They also describe the specific barriers limiting migrant populations' ability and willingness to follow public health measures, another factor that influences their higher risk for COVID-19 infection. Overall, these factors, together with recent high-transmissibility variants, may lead to outbreaks of variants of concern in workplaces that may spread to the community. To prevent such spread, the authors recommend prioritizing vaccinations for these people, with special attention to their needs and challenges. For example, they suggest improving vaccine access with mobile vaccination units, which should be manned with staff able to provide immunizations in a culturally sensitive manner. Additional measures could be culturally tailored vaccination campaigns, as well as sick pay for vaccine and any illness. Physical conditions in workplaces should be improved to prevent viral spread. Measures such as isolation pay should be considered to encourage workers to stay home while sick.

Prendki et al. [3] address the issue of caring for older adults during the COVID-19 pandemic. The authors provide data on several aspects that deserve attention in this population suffering from poor outcomes after COVID-19. First, they describe commonly

reported atypical clinical presentations of COVID-19 in the elderly, with higher rates of impaired consciousness, disorientation, and delirium compared with younger adults, and lower rates of typical symptoms, such as fever and shortness of breath. Attention to this atypical presentation is needed to avoid missed diagnosis. The authors given an overview of short-term mortality rates reported in the literature among the elderly, ranging from 11% (mostly approximately 40%) to 77%.

The authors suggest that frailty and comorbidities, rather than age itself, predict mortality; hence, the broad variability in mortality presented. Another explanation for the variability may be different criteria for admittance to the intensive care unit, with the elderly excluded from some centres and during the earlier stages of the pandemic. Reasons for increased mortality are suggested, including multiple comorbidities, impaired immune function due to ageing, delayed diagnosis attributed to atypical presentation, limited access to the intensive care unit, and limited validity of clinical trials evaluating therapeutic interventions because of underrepresentation of the elderly. Reduced effectiveness of vaccines compared with younger adults is discussed, with data from Israel supporting a third vaccine dose for the elderly. Finally, knowledge gaps regarding long COVID in the elderly are discussed.

Bartelt et al. [4] review burning issues regarding COVID-19 in the solid organ transplantation population. Donor selection and safe organ procurement during COVID-19 are discussed. Demonstrating that donor-derived COVID-19 infections occurred only in lung transplant patients suggests further research is needed regarding the donation of other organs, even from actively infected donors. The timing of transplantation in candidates who test positive for SARS-CoV-2 is also discussed, showing that most centres delay transplant even in asymptomatic candidates. Data concerning lung transplant as a treatment option for COVID-19 pulmonary sequelae are provided, suggesting that further research regarding selection criteria and timing is needed. Epidemiology and clinical features of COVID-19 in solid organ transplant recipients are reviewed. Clinical presentation may be atypical, without fever and with dyspnoea and acute kidney injury as common presentations. The risk of severe disease in transplanted patients is reported to be mostly affected by risk factors such as age and comorbidities rather than the transplant itself. Guidance on the management of immunosuppression during COVID-19 infection is still conflicting. Vaccination strategies are discussed with a suggestion for a three-shot primary series of mRNA-based vaccines for solid organ transplant recipients, although the serologic response is still lower than

in immunocompetent individuals. Other strategies for prevention are also suggested.

Variable difficulties in coping with the COVID-19 pandemic arise in different specific populations. These populations should be approached differently than the general population in terms of COVID-19 management. The data provided in this issue constitute a basis for further questions for practice and research. In migrant populations, efforts should focus on the development and implementation of specific measures for the prevention of COVID-19. These should be culture- and language-directed, adapted for the specific population, and consider its socioeconomic unique characteristics. Future research could include studies evaluating bundles of such measures, with the outcomes being vaccine acceptance rates and infection rates among migrant populations. For the elderly population, prospective cohort studies should better characterize the atypical presentation reported in this review, its frequency, and the correlation with outcomes. Such studies should also identify predictors of poor outcomes in this population, including frailty and comorbidities. Finally, considering that older adults are the population the most affected by COVID-19, interventional clinical trials should be designed to include a preplanned subgroup of older adults. Regarding solid organ transplantation, questions concerning the timing of procurement of infected donors and timing of transplantation for infected candidates remain unanswered. Available data from high-volume transplant centres should be published to guide further management and research. Similarly, centres should report outcomes of lung transplantation for COVID-19. Randomized controlled trials should be conducted to evaluate different approaches for immunosuppression reduction in infected solid organ transplant recipients.

### Transparency declaration

No conflicts of interest. No external funding

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Dafna Yahav<sup>1,2,\*</sup>

<sup>1)</sup> *Infectious Diseases Unit, Sheba Medical Center, Ramat Gan, Israel*

<sup>2)</sup> *Faculty of Medicine, Tel-Aviv University, Tel-Aviv, Israel*

\* Corresponding author: Dafna Yahav, Sheba Medical Center, Infectious Diseases Unit, Ramat-Gan, Israel.  
E-mail address: [dafna.yahav@gmail.com](mailto:dafna.yahav@gmail.com).

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