

December 05, 2023 5 min read

Q&A: Center focuses on researching lung diseases in Asian patients

Key takeaways:

- There is a lack of research on Asian patients with lung diseases.
- A new research center in Singapore plans to address these research gaps to provide Asian patients with better care.

Respiratory diseases in Asian patients are not fully understood because much of this research is performed in European patients, and this can have a major impact on diagnosis and treatment, according to a press release.

Lung diseases may manifest differently in Asians vs. Europeans, so use of research solely from a European population could result in inaccurate or late diagnoses among Asians, **Sanjay Haresh Chotirmall, MD, PhD**, associate professor, Provost's Chair in molecular medicine and vice dean (research) designate at Lee Kong Chian School of Medicine at Nanyang Technological University in Singapore, told Healio. Additionally, when Asian patients are traditionally excluded from research investigating a treatment's safety and efficacy, it is not clear how the drug will perform in them.



“The lack of research on Asian populations may hinder efforts to develop personalized treatment plans.”

Sanjay Haresh Chotirmall, MD, PhD

To address this lack of current Asian-centric research, Chotirmall and those at Nanyang Technological University created The Academic Respiratory Initiative for Pulmonary Health (TARIPH) Centre, which plans to provide improved care for Asian patients through partnerships and research.



John
A. Abisheganaden

Healio spoke with Chotirmall, who serves as co-academic lead of TARIPH along with his colleague **John A. Abisheganaden, MBBS**, to learn more about the gaps in research on respiratory diseases in Asian patients, the goals of the TARIPH center and studies planned to be performed in the center.

Healio: Why is current research on respiratory diseases mostly Euro-centric? How long has there been a gap in research on respiratory disease in Asian patients?

Chotirmall: The predominance of research on respiratory diseases involving Caucasian populations can be attributed several factors. Some of the key reasons include:

- **Historical bias:** Led to a concentration of data and knowledge on diseases primarily affecting these populations which also includes respiratory diseases.
- **Sample availability:** Researchers often rely on convenient and accessible populations for their studies. In some cases this may mean studying groups that are more readily available or easier to recruit, leading to an overrepresentation of certain ethnic or racial groups in the international literature. It is more challenging to recruit Asian patients in those countries hence explaining the lack of data on Asian patients.
- **Genetic susceptibility:** Some respiratory diseases such as [cystic fibrosis](#) and alpha-1 antitrypsin deficiency have important genetic links and are predominant in Western rather than Asian populations. An example is the mutation of the cystic fibrosis transmembrane conductance regulator (CFTR) protein causing cystic fibrosis which is rare in Singapore but more common among Caucasian populations.
- **Socioeconomic factors:** Socioeconomic factors, including access to health care and research opportunities, can contribute to disparities in research participation. Populations with better access and resources may be more likely to be included in studies. With the western countries being in general more developed compared with many smaller Asian countries, research participation would likely be higher in western populations compared with Asian populations. Although this is now changing.
- **Data quality and standardization:** Ensuring high-quality data is crucial for scientific research. Researchers may choose to work with populations that have well-documented health records and standardized data collection processes, which may be more prevalent in certain regions such as western countries which have taken up electronic medical record systems much earlier than several Asian counterparts.

Healio: How does the lack of research affect Asian patients suffering with a respiratory condition and the clinicians caring for them?

Chotirmall: There are various ways in which this lack of research may impact Asian patients with respiratory conditions and the clinicians caring for them.

Firstly, a lack of research limits the generalizability of existing findings into this population. If research predominantly involves one ethnic or racial group, such as Caucasians, there may be limitations in generalizing the findings to other populations. This can be particularly problematic for Asians, as they may have distinct genetic, environmental and lifestyle factors that could affect the prevalence, presentation and management of respiratory conditions.

Also, we have an inadequate understanding of disease patterns. Different populations may exhibit variations in the prevalence, presentation and natural history of these conditions. Without sufficient dedicated research in Asian populations, clinicians may lack a comprehensive understanding of how these conditions manifest and progress in that group, potentially leading to delayed or even inaccurate diagnoses. In addition, the efficacy of established treatments in Asian populations is under-researched.

Responses to medications and treatments, for instance, vary among different ethnic groups due to genetic and physiological differences. The lack of diversity in clinical trials may result in uncertainty about the efficacy and safety of respiratory medications and interventions in Asian patients.

Further, the absence of research on specific populations may contribute to [health disparities](#). Asian patients may not receive optimal care tailored to their needs, potentially leading to disparities in health outcomes.

As the field of medicine moves toward personalized and precision medicine, understanding the unique characteristics of diverse populations becomes increasingly important. The lack of research on Asian populations may hinder efforts to develop personalized treatment plans for individuals with respiratory conditions.

Lastly, respiratory conditions are influenced not only by biological factors but also by cultural and social determinant health. Without research that includes diverse populations, clinicians may be less equipped to address cultural and social factors that impact the prevention, management and outcomes of respiratory diseases in Asian patients.

Healio: What are the goals of the TARIPH Centre for Respiratory Research Excellence?

Chotirmall: The TARIPH Centre's goals are aligned with our mission of "Bringing Research to Patients through Partnerships." Our goals are:

1. To build upon existing and actively engage new partnerships with clinicians, researchers, patients and industry partners in Singapore and across the world.
2. Augment national academic capabilities in respiratory research by aligning strategic academic expertise across Singapore to promote lung health among Singaporeans.
3. Develop new models for patient advocacy and to strengthen patient-clinician collaborations through co-creation of projects, research studies and outreach events.
4. Perform innovative respiratory studies leveraging the latest science and technology advances for lung health.

Healio: Why was it important to build this center with international partnerships in mind?

Chotirmall: International collaborations allow the TARIPH Centre to tap into a wider pool of expertise and resources. Different countries and institutions often specialize in specific fields, techniques or technologies, and by partnering with them, the TARIPH Centre can access this specialized knowledge and equipment, which might not be available locally.

Through international partnerships, the pace of research can also be expedited. By working with partners who may have made progress in a related area or who can share their preliminary findings, researchers can build upon existing work to accelerate the development of new knowledge and innovations.

Lastly, due to the relatively smaller population of Singapore compared with other countries, international partnerships can also provide access to larger and more diverse datasets or sample populations. This can lead to more comprehensive and generalizable results, especially relevant across the Asian sub-continent.

Healio: The launch of this center is also accompanied by Singapore's first patient panel for respiratory medical research. How will this resource help advance care for Singaporean and Asian patients with asthma, COPD and other lung diseases?

Chotirmall: The panel will enable patients to be research partners, helping to shape research design, directions and implementation on what matters to patients. This would be going beyond the traditional role of patients as research participants.

In addition, current treatment and services are largely based on research from non-Asian populations in the West and there is a lack of data on whether such guidelines work best for Singaporeans. Hence, these patient advocates will provide details of their experiences living with respiratory issues to ensure that treatments rolled out meet the needs of patients in the local and also the wider Asian context.

Healio: What research is set to be conducted in this center? How will findings from these studies potentially change current treatments given to Asian patients?

Chotirmall: As the first-of-its kind, the TARIPH Centre will focus on innovations to improve lung health, analyze the impact of climate change on respiratory health and build a database of Asian-focused lung diseases. Singaporeans, or Asians in general, are exposed to different climate and have different genetics, environmental influences and cultural beliefs from those in the West. Hence, there may be environmental triggers relevant to Singapore (and the wider Asia settings which currently lack identification and/or understanding. Subsequently, target interventions may be identified which specifically cater to the local context or Asian disease types or patterns present in Singapore or the wider sub-continent.

Reference:

New NTU Singapore research centre on lung health to fill gap in Asian-centric respiratory disease, develop personalized and targeted treatment. https://www.ntu.edu.sg/docs/default-source/corporate-ntu/hub-news/new-ntu-singapore-research-centre-on-lung-health-to-fill-gap-in-asian-centric-respiratory-disease-develop-personalised-and-targeted-treatment.pdf?sfvrsn=4e5c3e11_1. Published Sept. 20, 2023. Accessed Oct. 24, 2023.

Sources/Disclosures

[Collap:](#)

Source: Healio Interviews

Disclosures: Chotirmall reports consulting for Boehringer Ingelheim, CSL Behring and Pneumagen; receiving lecture fees from AstraZeneca and Chiesi Farmaceutici; and participating on data safety and monitoring boards for Imam Abdulrahman Bin Faisal University and Inovio Pharmaceuticals.

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May 20, 2022 1 min read

Availability, pricing of respiratory medications varies in low- and middle-income settings

SAN FRANCISCO — The availability and pricing of asthma and COPD medications varies across different settings, with greater availability in urban and higher-income settings compared with rural and lower-income settings, researcher reported.

“The burden of chronic respiratory disease is increasing globally, with the highest disease-related morbidity and mortality centered in ... [low- and middle-income countries](#),” Nicole Robertson, MPH, from the University of Kentucky College of Medicine, said during a presentation at the American Thoracic Society International Conference. “Therefore,

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