Medical News in Brief

Early Respiratory Infections Tied to Premature Death Later in Life

After adjusting for certain baseline factors, people who had lower respiratory tract infections such as bronchitis or pneumonia before age 2 years were almost twice as likely to die from a respiratory disease by age 73 years compared with those who were not infected as children.

The majority of deaths from respiratory diseases were due to chronic obstructive pulmonary disease, according to the results from 3589 UK participants included in the analysis. The researchers did not find a link between lower respiratory tract infections in childhood and higher risks of premature death from other causes.

The link might be driven by factors such as maternal smoking that the researchers could not account for, the authors of an associated comment noted in The Lancet. Still, the study “adds to the evidence that adults whose chronic lung disease has been attributed to smoking-related effects might also have disease resulting from childhood exposures that are largely preventable,” the comment’s authors wrote.

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Human Flu Cases in Cambodia Not Due to Bird Flu Outbreak Viruses

Two people in Cambodia who were infected by avian influenza A(H5N1) in February, including a child who died, were the first human cases the country has seen in about 9 years. Genetic sequencing revealed that the viruses belonged to H5 clade 2.3.2.1c and are not the same as the H5 clade 2.3.4.4b viruses currently infecting birds worldwide, according to a US Centers for Disease Control and Prevention (CDC) statement.

There is also no evidence that the viruses in the Cambodia cases have evolved to infect people more easily or evade antiviral treatments, according to an update the CDC released about a week later.

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Combining Drugs Improved Hard-to-Treat Depression in Older Adults

The psychological well-being of older adults with treatment-resistant depression increased when physicians added aripiprazole, an atypical antipsychotic, or bupropion, a dopamine and norepinephrine reuptake inhibitor, to their current antidepressant medication, according to results from a trial involving 742 participants aged 60 years or older. More participants who supplemented their antidepressant with aripiprazole or bupropion also experienced remission of their depression at the end of the 10-week study than those who switched their medication to a different single antidepressant.

The group that received aripiprazole in addition to their current antidepressant experienced a lower rate of falls than participants who combined their antidepressant with bupropion, the researchers reported in the New England Journal of Medicine.

“Findings from this trial support aripiprazole augmentation as a strategy for treatment-resistant depression in older persons, largely because of the lower risk of falls than with bupropion augmentation,” the authors of an associated editorial wrote.

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Public Had Most Trust in Advice From Physicians, Nurses During Pandemic

Physicians and nurses were the most highly trusted sources of health information during the COVID-19 pandemic, with 54% and 48%, respectively, of respondents to a nationally representative survey reporting high confidence in their guidance. Scientists and pharmacists also received high marks, with 40% or more of participants citing a great deal of trust in their recommendations, according to responses from 4208 US adults collected in February 2022.

Of the respondents, 37% expressed high levels of trust in the US Centers for Disease Control and Prevention and 33% in the National Institutes of Health, the researchers noted in Health Affairs. Only about a quarter of respondents reported high trust in state and local public health departments.

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Mycobacterium Infections Traced to Hospital’s Water Purification System

An investigation of 4 US patients who developed Mycobacterium abscessus infections after cardiac surgery pinpointed the illnesses to the hospital’s water and ice machines. The patients, who were diagnosed between March 2017 and October 2018, did not have operating rooms, ventilators, heater-cooler devices, or dialysis machines in common, but genomic sequencing confirmed that bacterial specimens taken from patients and from the floor’s water and ice machines shared part of their genetic code.

A commercial water purifier with charcoal filters and a UV irradiation unit led to the inpatient tower where the affected patients were treated. The water and ice machines in the tower had high levels of mycobacteria and low levels of chlorine compared with those in 2 other inpatient towers not fed by the same water purifier.

“Well-intentioned efforts to modify water management systems may inadvertently increase infection risk for vulnerable patients,” the researchers wrote in the Annals of Internal Medicine.

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Inflammation Genes Show Age-Dependent Link With Autism

Almost 200 genes are expressed differently in the brains of people with autism compared with controls, according to results from a study of 59 pediatric and adult brain donors published in PNAS. The genes are involved in brain connectivity, immune response, and inflammation, according to a statement.

The researchers analyzed brain tissue from a region of the brain involved in language processing and social perception. They also found that 14 genes that control synaptic and inflammatory pathways exhibited age-dependent differences between the brains of those with autism and controls. The changes in the brains of people with autism overlapped significantly with changes reported in people with Alzheimer disease, the researchers noted.

"Initial excess and overconnectivity of neurons may make the brain more vulnerable to early aging and inflammation, which may lead to further changes in the brain structure and function," study author Cynthia Schumann, PhD, of UC Davis, said in the statement.

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To Invade the Brain, Pathogens Exploit Pain, Immune Cells

Bacteria use a pain pathway involving the central nervous system’s protective membranes—the meninges—to attack the brain, according to a study conducted in mice.

The researchers, who reported their results in Nature, found that infection with Streptococcus pneumoniae and Streptococcus agalactiae triggered nociceptors—neurons that sense pain—to release a signaling neuropeptide called calcitonin gene-related peptide, known as CGRP. When CGRP attached to receptor activity-modifying protein 1, or RAMP1, on immune cells known as macrophages in the meninges, it suppressed their activity and allowed bacteria to proliferate.

"Targeting this neuroimmune axis in the meninges can enhance host defences and potentially produce treatments for bacterial meningitis," an illness with mortality rates up to 30%, the researchers wrote.

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“Living” Systematic Review of Mental Health During Pandemic

Compared with data from 2018 and 2019, general mental health and anxiety symptoms did not significantly increase in the general population during the COVID-19 pandemic, according to a meta-analysis of 137 studies from 134 cohorts in mostly high-income and upper middle-income countries. Depression symptoms increased slightly in the study, published in The BMJ.

Among women and female participants, however, general mental health, anxiety, and depression symptoms all worsened by small amounts during the pandemic. Depression symptoms also increased among older adults, university students, and people who belong to a sexual or gender minority group. The studies included in the analysis did not assess outcomes for other potentially vulnerable groups, including people with low socioeconomic status or young children.

The researchers plan to continuously update their findings on an ongoing basis with new evidence in the “living” systematic review.

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Virtual Care Teams Improved Guideline Adoption for Heart Failure

Suggestions from a virtual care team that included a physician and pharmacist improved implementation of recommended therapies for heart failure by patients’ primary treating teams compared with usual care, according to a study of 252 hospital encounters.

More patients who received the intervention-started guideline recommended medications including β-blockers and mineralocorticoid receptor antagonists while hospitalized. There was no increase in adverse events in the virtual care group, although the strategy was less effective for Spanish-speaking and Hispanic patients, the researchers reported in the Journal of the American College of Cardiology.

Multidrug therapies are strongly endorsed for patients with heart failure, but application of the guidelines too often is inadequate or inequitable, the researchers wrote. – Emily Harris

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Note: Source references are available through embedded hyperlinks in the article text online.