Trends & Technology

COVID-19 patient lung autopsies may point to new treatments

Information published in Science Translational Medicine could help predict severe and prolonged COVID-19 cases among high-risk individuals and inspire new treatment options, say scientists at the National Institutes of Health (Sci Transl Med 2021;13).

In a small study of lung samples from 18 patients who had died of COVID-19 – as well as plasma samples from six of those patients – scientists have extracted new information that could help health care professionals better determine when to begin existing treatments as the disease progresses. The new research provided details about how SARS-CoV-2 spreads in the lungs before manipulating the immune system and causing damage such as lung failure.

Scientists believe this new information will be particularly useful in focusing the care of COVID-19 patients who are elderly, obese, or have diabetes. All samples studied in the research came from patients with at least one condition that put them at high risk for COVID-19.

Another new finding confirmed that SARS-CoV-2 directly infected basal epithelial cells inside the lungs, which prevented them from repairing damaged airways and lungs or generating new healthy tissue. This is significant because it differs from the way influenza attacks lung cells.

Source: asamonitor.pub/3dldVgX

NIH begins long-term study of children with COVID-19

The Clinical Center of the National Institutes of Health in Bethesda, Maryland, has begun a large, long-term study of COVID-19 in children. The study will monitor the effects of COVID-19 in up to 1,000 children who have previously tested positive for the disease and will track their physical and mental health over the course of three years.

Scientists hope the study will reveal more details on the effects of COVID-19 on children’s health, their development and immune responses to infection, and their overall quality of life after infection. Although the COVID-19 pandemic initially seemed less likely to impact children, over the course of the last almost two years, more children have experienced significant acute and long-term disease effects, such as multisystem inflammatory syndrome in children (MIS-C), which can occur even in asymptomatic patients. Vaccines becoming more available to children now, but this patient population has remained vulnerable.

The study will examine children between 3 and 21 years of age, as well as children between birth and 21 years of age, with consent from their parents or guardians.

Source: asamonitor.pub/3pTqV2t

CDC reports a record 100,000 overdose deaths over pandemic year

From April 2020 to April 2021, the Centers for Disease Control and Prevention (CDC) reported 100,306 deaths from a drug overdose. This timeline overlaps with the first year of the pandemic. The record-breaking figure was a 28% increase over the previous one-year period (98,976 deaths).

This mortality data is provided by the National Vital Statistics System. The CDC says this is the first time overdose deaths have topped 100,000 for a one-year period.

The April 2020-April 2021 deaths included a 50% increase in fentanyl deaths. According to the National Institute on Drug Abuse, fentanyl is up to 100 times stronger than morphine.

The federal government is looking for ways to curb the latest trend in the opioid epidemic. One tool it’s pursuing is the distribution of fentanyl test strips to help patients and health care providers identify counterfeit pills. Other efforts will include increased evidence-based treatment options and recovery support.

Source: asamonitor.pub/3poSMal

Pfizer’s oral COVID-19 antiviral achieves positive trial results

A late-phase trial of Pfizer’s oral COVID-19 antiviral drug Paxlovid has been found to cut the risk of hospitalization or death by 89%. At the time of this writing, Pfizer had concluded the study and sought FDA emergency use authorization (EUA) for its treatment.

The phase 2/3 trial of non-hospitalized adults with COVID-19 who were at high risk of disease progression to severe illness randomized patients to receive either placebo or Paxlovid. In 1,219 patients, there were six hospitalizations and zero deaths in the 607 patients given Paxlovid compared with 41 hospitalizations and 10 deaths in the placebo group. Vaccinated patients were excluded from the study.

If the EUA is granted, patients could soon have access to an oral therapy designed to significantly lower their risk of deteriorating outcomes from COVID-19. Merck has also developed an oral antiviral called molnupiravir that could help patients in a similar way.

Source: asamonitor.pub/3pqxwk5

FDA authorizes marketing for new virtual reality chronic pain reduction system

In November 2021, the FDA authorized the marketing of EaseVRx. This prescription-based virtual reality (VR) system, which is manufactured by AppliedVR, combines cognitive behavioral therapy with other behavioral methods to help reduce chronic lower back pain in patients age 18 years or older.

EaseVRx is designed for at-home self-use. Patients use a VR headset and controller. The headset is equipped with a “Breathing Amplifier” that directs a user’s breath toward the headset’s microphone for use in deep breathing exercises.

The device leads users through an eight-week, skills-based treatment program, which includes activities such as deep relaxation, attention-shifting, interoceptive awareness, perspective-taking, distraction, and more. Users interact with a series of VR sessions that are between two and 16 minutes long.

Chronic lower back pain includes moderate to severe lower back pain that has persisted for more than three months; it is one of the most common chronic pain conditions in the nation. Patients with chronic pain may benefit from EaseVRx’s cognitive behavioral therapy used along with other currently available treatments, such as prescription and over-the-counter medications, exercise, steroid injections, surgery, and transcutaneous electrical nerve stimulation.

Source: asamonitor.pub/31r5deO

Technology

New medical technology designed to better manage hypotension during surgery gains FDA clearance

Directed Systems Limited, a medical software and data science company based in Cambridge, U.K., recently received U.S. Food and Drug Administration 510(k) clearance for a new version of its Hypotension Decision Assist (HDA) software, HDA-OR2. This follows the initial FDA 510(k) clearance of the original HDA in November 2019.

HDA software is designed to help anesthesiologists better manage hypotension during surgery and is installed on a medical grade touch-screen tablet. HDA-OR2 is indicated to acquire, process, and display key cardiovascular characteristics of patients undergoing surgery to assist anesthesiologists in management of blood pressure, hemodynamic stability, and the cardiovascular system during surgery.

The newest version is designed for use on a smaller, lighter, more portable tablet, and enables a complete case review summary that visualizes any hypotensive episodes, total cumulative hypotension, and trends of hemodynamic parameters over the procedure. Its improved functionality also has additional networking capabilities, ability to access cloud-based analytics, and a reporting platform for in-depth analysis of individual and overall caseload metrics.

Source: asamonitor.pub/SGh4IHW

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