Investigational KRAS Inhibitor Tested for Advanced Solid Tumors
No dose-limiting toxic effects or treatment-related deaths occurred with sotorasib, an experimental drug that targets the cancer-related G12C KRAS genetic variant, in a phase 1 trial involving patients with heavily treated advanced solid tumors.

The KRASp.G12C variant is present in 13% of non-small cell lung cancers (NSCLCs) and in 1% to 3% of colorectal and other cancers, but despite decades of drug research, no KRAS inhibitors are available for clinical use. Of the study’s 129 participants, 59 had NSCLC, 42 had colorectal cancer, and 28 had melanoma or pancreatic, endometrial, or appendiceal cancers. The patients received daily oral sotorasib monotherapy for a median 3.9 months and were followed up for a median 11.7 months.

Amgen Inc and academic collaborators reported results in the New England Journal of Medicine. The trial’s primary endpoint was safety. Seventy-three patients had treatment-related adverse events, including 15 patients with grade 3 or 4 events such as hepatitis and increased alanine aminotransferase and aspartate aminotransferase levels. Few, however, discontinued the therapy because of toxicity. Most of the 107 participants who discontinued treatment did so because their disease progressed. Fifty-four patients died during the study.

Patients with all cancer types responded to the treatment, but it appeared to be most effective among those with NSCLC. In that subgroup, 32.2% of participants saw their tumors shrink—although no patients had a complete response—and the median progression-free survival was 6.3 months. In contrast, 9% to 18% of patients taking current NSCLC therapies have a response to second- or third-line drugs, and their median progression-free survival ranges from 2.5 months to 4 months.

“Overall, the results of this trial are very encouraging,” the authors of a related editorial wrote, adding that “combination strategies may improve the likelihood of achieving complete responses to KRASp.G12C inhibition.”

COVID-19 Antibody Tests Perform Well in Head-to-Head Comparison
Four widely used severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) antibody tests had high sensitivity and specificity in what scientists said was the first large head-to-head comparison of commercial immunoassays developed during the coronavirus disease 2019 (COVID-19) pandemic.

The trial’s primary end point was the manufacturer-determined thresholds used to interpret results as either positive or negative (Roche), by testing samples taken at least 30 days after symptom onset (Roche), or both (Abbott, DiaSorin).

The authors of a linked commentary pointed out that mild and asymptomatic infections were underrepresented in the study and that samples from children with SARS-CoV-2 weren’t included, factors that could influence performance measures.

Although all these assays can effectively detect SARS-CoV-2 antibodies, the durability and nature of immunity conferred by these antibodies remains unclear,” the study’s authors wrote.

Tinnitus Symptoms Improve With Sound and Tongue Stimulation
A noninvasive device that delivers sound to the ears and electrical stimulation to the tongue improved tinnitus symptoms in a trial reported in Science Translational Medicine. No drugs or devices are approved for tinnitus, which affects 10% to 15% of people.

Bimodal neuromodulation for tinnitus has previously been demonstrated in smaller studies. In the recent trial, researchers randomly divided 326 adults with chronic tinnitus into 3 groups that received different stimulation settings. They instructed participants to use the device for a minimum of 36 hours in 60-minute sessions over 12 weeks.

Overall, tinnitus symptom severity significantly improved, although about a fifth of participants experienced no change or a worsening of symptoms. Two groups that received neuromodulation using higher-frequency tones with synchronized or shorter delayed tongue stimulation had sustained improvements over 12 months.

No serious treatment-related adverse events (AEs) occurred with the device. Most participants adhered to the treatment and said they benefited from it. “These high compliance and satisfaction rates, when compared to the reported AEs, support a strong benefit-risk profile for this medical device treatment for tinnitus,” the authors wrote. — Jennifer Abbasi

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