advanced *RET*-altered medullary and papillary thyroid cancers.

"Data from the LIBRETTO study firmly establish *RET* as a bona fide oncogenic driver," said Justin Gainor, MD, of Massachusetts General Hospital in Boston. In the field of NSCLC, the response rates we're observing resemble activity that we've seen in other subgroups of oncogene-driven lung cancers, such as *ALK* and *EGFR*."

Notably, selpercatinib showed robust activity in crossing the blood–brain barrier, producing an ORR of 91% among patients with measurable brain metastases. The results suggest that it could treat and potentially prevent brain metastases, said Drilon.

"CNS [central nervous system] activity is critical for patients with lung cancer and, as systemic therapies have gotten better, it has emerged as an important sanctuary of disease," said Gainor. "Furthermore, the CNS is an important source of morbidity and mortality for our patients, so development of agents with strong CNS activity is very important."

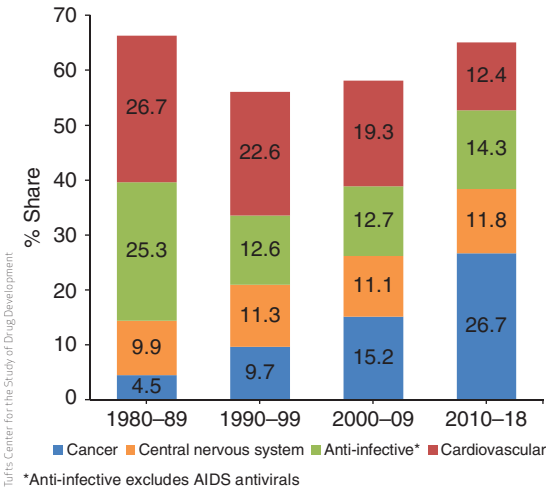
Eli Lilly has partnered with Thermo Fisher Scientific to use the latter's Oncomine Dx Target Test to find *RET* alterations in patients with NSCLC. The test screens tumor samples for multiple gene variants associated with NSCLC to identify patients eligible for approved targeted treatments.

Investigators hope that selpercatinib will be approved by the end of the year.

"Prior to selpercatinib, we tried hard to repurpose existing multikinase inhibitors for these patients, but we saw low response rates and substantial toxicities," said Drilon. "Selpercatinib has dramatically changed these outcomes." *–Janet Colwell* ■

BY THE NUMBERS

Percent Share of Novel FDA Drug Approvals in Four Major Therapeutic Categories, 1980–2018



*Anti-infective excludes AIDS antivirals

Between 1980 and 2018, novel cancer drug approvals as a percentage share of all novel FDA drug approvals increased from 4.5% to 26.7% [Tufts Center for the Study of Drug Development, *Impact Report* 2019;21(5):1–4]. Over that period, cancer drugs transitioned from accounting for the smallest share of the four major therapeutic categories—defined as those that received the most approvals—to making up the largest share. The increase, says Joseph DiMasi, PhD, of the Tufts Center for the Study of Drug Development in Boston, MA, who authored the report, likely reflects a convergence of factors: scientific advances, particularly in the area of targeted therapies; substantial markets created by high demand; and the FDA facilitating approvals with specialized programs such as accelerated approvals and breakthrough designations.

For more news on cancer research, visit *Cancer Discovery* online at http://cancerdiscovery.aacrjournals.org/CDNews.

NOTED

Durvalumab (Imfinzi; AstraZeneca) may improve survival of patients with newly diagnosed extensive-stage small cell lung cancer, researchers reported at the 2019 World Conference on Lung Cancer in Barcelona, Spain. In the phase III CASPIAN trial, patients treated with the PD-L1 inhibitor plus chemotherapy had a median overall survival (OS) of 13 months, and 33.9% were still alive after 18 months, compared with 10.3 months and 24.7% in patients who received chemotherapy alone.

The FDA approved the antiandrogen apalutamide (Erleada; Janssen) in metastatic, castration-sensitive prostate cancer. Approval was based on the phase III TITAN trial, in which the drug plus androgen-deprivation therapy extended OS and progression-free survival compared with androgen-deprivation therapy alone.

Radiotherapy may reduce the risk of cytokine release syndrome in patients with non-Hodgkin lymphoma treated with chimeric antigen receptor (CAR) T-cell therapies, according to findings presented at the American Society for Radiation of Oncology Annual Meeting in Chicago, IL. In the study, none of the five patients who received radiotherapy in the month before CAR T-cell infusion and one of the seven who received earlier radiotherapy experienced grade 3 or higher cytokine release syndrome, compared with five of 19 patients who never received radiotherapy.

Amgen's **blinatumomab (Blincyto) showed strong efficacy in children with relapsed B-cell acute lymphoblastic leukemia,** prompting the company to halt enrollment in two phase III trials. In the Study 20120215 trial, the bispecific antibody improved event-free survival compared with chemotherapy, and in the AALL 1331 trial, the therapy trended toward improved disease-free survival and OS compared with chemotherapy.

Carcinogenic chemicals in U.S. drinking water could cause 100,000 lifetime cases of cancer (Heliyon 2019;5:E02314). Researchers analyzed 22 contaminants in 48,000 water systems between 2010 to 2017 and found that the national risk of cancer is two orders of magnitude higher than what would be considered insignificant. Most of the risk can be attributed to arsenic, by-products of disinfectants, and radioactive chemicals.