RET inhibitor selpercatinib demonstrates durable responses in tumor-agnostic population

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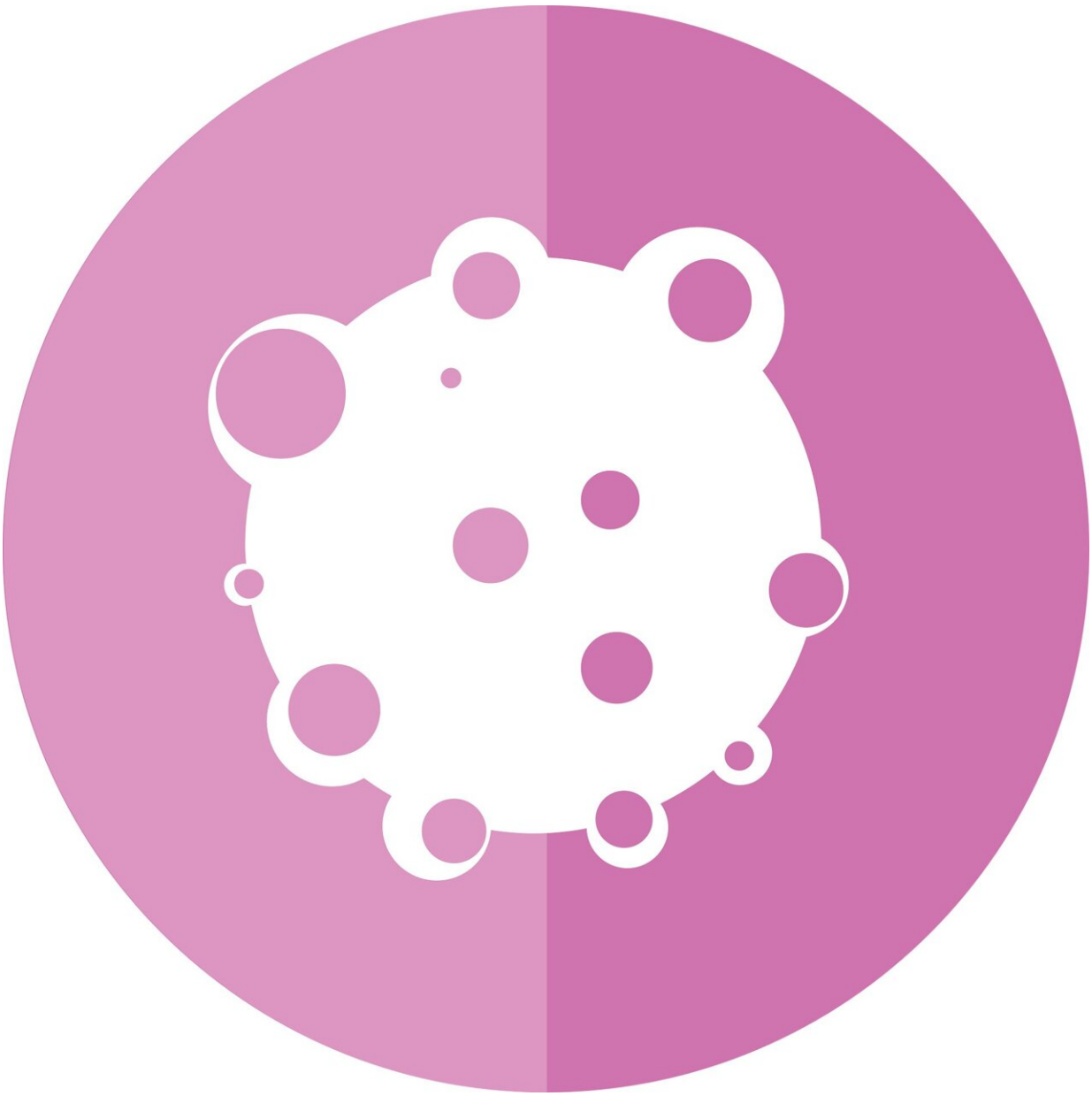

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The highly selective RET inhibitor selpercatinib was well-tolerated and achieved durable objective responses across multiple tumor types in the Phase I/II LIBRETTO-001 trial, according to researchers from The University of Texas MD Anderson Cancer Center.

Results from the tumor-agnostic cohort of patients, published today in *The Lancet Oncology*, show an objective response rate (ORR) of 44% for the targeted therapy, which was approved in 2020 by the Food and Drug Administration for *RET*-altered lung and thyroid cancers based on previously published results from the same trial.

"The findings from this study demonstrate the potential for RET inhibitors to benefit patients across many tumor types," said corresponding author Vivek Subbiah, M.D., associate professor of Investigational Cancer Therapeutics. "They are a testament to the power of precision medicine to match the right patients to the right targeted therapy at the right time based on their underlying genetic alteration."

RET fusions occur when a portion of the chromosome containing the *RET* gene breaks and rejoins with another piece of chromosome, creating a fusion protein that drives cancer development. Relatively rare across cancer types, these mutations are found in just 5-10% of thyroid cancers and 1-2% of non-small-cell lung cancers. Across all other cancer types, they occur with a frequency of less than 1%. However, *RET* -altered cancers metastasize to the brain at a high frequency.

The open-label basket trial enrolled 45 patients in the tumor-agnostic

cohort, with four excluded from the analysis because they did not meet the criteria for follow-up time. Participants were 69% white, 24% Asian, 4% Black and 1% other. The median age was 53, and women accounted for 51% of the participants.

Eligible patients for the trial had disease progression on or after previous systemic therapies or had no satisfactory therapeutic options, and all patients had an Eastern Cooperative Oncology Group (ECOG) performance status of 0-2.

The primary tumor diagnoses included 12 patients (27%) with pancreatic, 10 (22%) with colon, four (9%) with salivary and three (7%) with either sarcoma or unknown primary cancer. No more than two patients had any other primary diagnosis, and 14 total tumor types were represented.

The most common grade 3 or higher adverse events were hypertension (22%), increased alanine aminotransferase (16%), and increased aspartate aminotransferase (13%). Adverse events occurred in 40% of patients.

Of the patients in this cohort, 5% had a complete response, 39% had a partial response, and 34% had stable disease. The median duration of response was 24.5 months and median progression-free survival was 13.2 months.

The ORR in patients with pancreatic cancer and colorectal cancers was 54.5% and 20% respectively, and responses were observed in all tumor types that had at least two patients enrolled and in four of the seven types with just one patient enrolled.

According to Subbiah, these results across tumor types underscore the need for detecting these rare cancers.

"We observed responses with selpercatinib regardless of cancer type, prior treatment history or gene fusion partner. This confirms *RET* fusions as a tissue-agnostic target," Subbiah said. "Implementation of comprehensive molecular screening strategies that include the ability to detect *RET* fusions will be critical for identifying patients across all cancers who may benefit from selpercatinib."

More information: Vivek Subbiah et al, Tumour-agnostic efficacy and safety of selpercatinib in patients with RET fusion-positive solid tumours other than lung or thyroid tumours (LIBRETTO-001): a phase 1/2, open-label, basket trial, *The Lancet Oncology* (2022). DOI: 10.1016/S1470-2045(22)00541-1

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