Sorafenib shows success in advanced differentiated thyroid cancer patients

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(Medical Xpress)—The kidney and liver cancer drug sorafenib holds metastatic thyroid cancer at bay for nearly twice as long as a placebo, according to a new study from researchers in the Abramson Cancer Center at the University of Pennsylvania published in the journal *Lancet*. This is the first effective treatment for thyroid cancer patients who progress following standard treatments.

Preliminary results of this randomized phase III trial were presented at a plenary session during the American Society of Clinical Oncology's annual meeting in 2013.

Based on these data, sorafenib was approved by the U.S. Food and Drug Administration (FDA) in November 2013 for patients with locally recurrent or metastatic, progressive, differentiated thyroid carcinoma refractory to radioactive iodine treatment. These patients previously had limited approved treatment options.

Thyroid cancer is highly curable through surgery and radioactive iodine treatment, but about 10 percent of the 60,000 patients who are diagnosed with the disease each year fail to respond to standard therapies, with tumors eventually appearing in the lungs, lymph nodes, bones and other sites. The only other drug for advanced thyroid cancer, doxorubicin, which was approved in 1974, is not used because it is highly toxic and is not effective.

"Until we began using sorafenib, we had no effective treatment options

for these patients who suffered due to progression of their disease," said Marcia S. Brose, MD, PhD, an assistant professor in the department of Otorhinolaryngology: Head and Neck Surgery in the Abramson Cancer Center and the Perelman School of Medicine at the University of Pennsylvania, who led the study, which is known as DECISION. "Now, we can give patients hope – a breakthrough medication that can stop the progression of the disease for an average of five months. This trial is the first step in a promising series of clinical trials to identify new drugs that are shifting the horizon for patients with advanced differentiated thyroid cancer."

Of the 417 metastatic thyroid cancer patients studied in the multicenter, international trial, 207 were randomized to take sorafenib, an oral drug, and 210 to a placebo arm. The study met its primary endpoint showing that among patients taking sorafenib, median progression-free survival was 10.8 months, compared to 5.8 months among the placebo group.

Twelve percent of patients experienced tumor shrinkage in the sorafenib arm, compared to 0.5 percent of patients taking a placebo. Importantly, the therapy also appeared to thwart disease progression even among many of those whose tumors did not achieve partial response: 42 percent of patients who took sorafenib had stable disease after six months, compared to 33 percent of those in the placebo group.

The most common adverse events observed among patients taking sorafenib included hand-foot skin reaction, diarrhea, alopecia, rash, fatigue, weight loss and hypertension, all of which are manageable and consistent with findings from previous trials of the drug for its approved indications.

The study also showed that sorafenib improves progression free survival across all subgroups and in patients irrespective of the BRAF or RAS mutations—which are common in patients with radioactive iodine

refractory differentiated thyroid cancer. Thus, those mutations are not predictive biomarkers for cancers treated with sorafenib.

"Sorafenib is the first effective and well tolerated drug to improve the outcomes for patients with radioactive iodine refractory and progressing differentiated thyroid cancer, and as such represents the new standard of care for patients that suffer from this this disease," said Brose.

Provided by University of Pennsylvania School of Medicine