Vandetanib almost doubles progression free survival in patients with thyroid cancer

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Results of a phase 2 randomised trial for patients with advanced differentiated thyroid cancer (DTC) show that those treated with the oral targeted agent vandetanib survived without the disease getting worse for almost twice as long as patients given placebo (11.1 months vs 5.9 months). The findings, published Online First in *The Lancet Oncology*, are the first to show clear evidence of prolonged progression free survival (PFS) with a targeted agent for advanced DTC, a disease for which no effective treatment exists.

Over the past decade, the incidence of thyroid cancer has more than doubled worldwide. Recently, multi-targeted kinase inhibitors have emerged as promising treatments for DTC, but until now, no placebo-controlled studies have been done.

Here, Martin Schlumberger from the Institut Gustave Roussy in France and colleagues aimed to establish whether vandetanib, a drug that targets three proteins known to play a key role in the growth and spread of thyroid cancer—endothelial growth factor receptor (EGFR), vascular endothelial growth factor (VEGF), and RET (REarranged during Transfection) protooncogene—would impact PFS and overall survival (OS).

The study randomly assigned 145 late-stage or advanced DTC patients from seven European countries to either 300 mg/day of vandetanib (72 patients) or placebo (73).

Compared with placebo, vandetanib was associated with significantly improved PFS of 11.1 months compared with 5.9 months. At 6 months, patients treated with vandetanib also had a significantly better disease control rate (DCR; which includes complete and partial responses and stable disease) than those given placebo. However, no significant difference in OS was noted between the groups.

Interestingly, patients with the more common papillary thyroid cancer (PTC) experienced more prolonged PFS (median PFS 16.2 months) than patients with either FTC or differentiated carcinoma (median PFS 7.7 months).

Patients who received vandetanib experienced much greater toxicities, in particular increased QTc prolongation (the lengthening of a specific interval of time in the heart's electrical cycle that can lead to death), diarrhoea, asthenia (weakness), and fatigue. Two treatment-related deaths also occurred in the vandetanib group.

According to Schlumberger, "These results are potentially good news for patients with aggressive DTC who currently have few treatment options. The significant improvements in PFS and DCR versus placebo suggest that vandetanib may be an effective treatment option for long-term stabilization of advanced DTC, particularly for patients with PTC."

In a linked Comment, Keith Bible from the Mayo Clinic, Rochester, USA says, "Despite providing important additional evidence about the clinical activity of vandetanib in DTC, [the study] leaves the important issue of the effect of vandetanib on overall survival unresolved."

He adds, "More work is needed to better clarify which patients with DTC might have the greatest net benefits from kinase inhibitors…and to develop individualised treatment approaches in DTC."

More information: Paper online: www.thelancet.com/journals/lan … (12)70335-2/abstract

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