TPS3188 **Poster Session**

Perfume trial: Phase II trial of binimetinib in patients with *BRAF* fusion-positive low-grade glioma or pancreatic cancer.

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Background: *BRAF* fusion was reported to be a rare mutation found in 0.3% of all solid tumors, but a high percentage of BRAF fusion has been reported in pilocytic astrocytoma (30-77%) and pancreatic acinar cell carcinoma (24-67%). Although treatment for *BRAF* V600 mutations has been developed, treatment for *BRAF* fusion has not yet been established. Recently, tovorafenib has been granted accelerated approval by the FDA for pediatric low-grade glioma (LGG) with *BRAF* alteration (including *BRAF* fusion). Still, it is not yet approved in Japan, and an unmet need exists. In *BRAF* fusion-positive solid tumors, the constitutively activated BRAF kinase domain forms dimers that cause activation of the MAPK pathway. MEK inhibitors have been reported to show anti-tumor effects against *BRAF* fusion-positive cell lines. Phase I/II trials with selumetinib or binimetinib have shown efficacy in patients with *BRAF* fusion-positive LGG. **Methods:** Perfume trial (NCCH2101/MK011) is an open-label, parallel, 2-cohort, multicenter, phase II, investigator-initiated registration-directed clinical trial to evaluate the efficacy and safety of binimetinib in patients with advanced or recurrent LGG or pancreatic cancer (PC) harboring *BRAF*fusion/rearrangement. Sample sizes of 16 and 11 patients are needed for LGG and PC at a one-sided significant level of 5% to achieve 85% and 70% power, respectively. Key eligibility criteria for LGG (grade 1 and grade 2 tumors according to WHO classification) include age≧12 (body weight ≧40 kg in 12-17 year old) and KPS/LPS≧70, regardless of history of cancer drug therapy. Key eligibility criteria for PC include age≧12 (body weight ≧40 kg in 12-17 year old); ECOG PS 0-1; refractory or intolerant to at least one prior cancer drug therapy. Enrolled patients receive binimetinib 45mgadministered orally twice daily. The primary endpoint is the objective response rate (ORR) using RECIST 1.1 by independent central review. The secondary endpoints include ORR by investigators' assessment, ORR by RANO in LGG, progression-free and overall survivals, disease control rate, duration of response, and safety. This study implemented a decentralized clinical trial system for patients living in remote areas to reduce their time and economic burden. Enrollment started in March 2023 and is ongoing at 6 facilities in Japan. As of Dec 2024, 6 patients with LGG and 3 patients with PC were enrolled. Clinical trial information: jRCT2031230007, NCT06159478. Research Sponsor: None.