3113 **Poster Session**

Impact of patient travel time on disparities in precision oncology clinical trials.

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Background: Precision oncology revolutionizes cancer care, allowing personalized treatments to improve outcomes. Precision oncology often entails participation in genotype-matched clinical trials, resulting in referrals from institutions providing comprehensive genomic profiling (CGP) testing to those conducting these trials. It is still being determined whether there are regional disparities in precision oncology. **Methods:** We conducted a retrospective review of 1127 patients (pts) referred to National Cancer Center Hospital (NCCH) for participation in genotype-matched clinical trials following CGP testing performed between June 2020 and June 2022. Travel distance and time were calculated utilizing Google Maps from the patient's residence to the NCCH. A total of 23 covariates were preselected and dichotomized per previous research or expert consensus as follows: age, sex, performance status, body mass index, tumor type, number of lines of prior therapies, number of metastatic sites, liver metastases, brain metastases, pleural or peritoneal effusions, biopsiability, neutrophil, hemoglobin, platelet, albumin, creatinine, total bilirubin, LDH, AST, CRP, place of residence (urban vs. rural), referring hospitals, and household income. All independent variables associated with participation in genotype-matched trials ($P < 0.20$) were included in a multivariable model, and variable importance was calculated using a machine learning (ML) model (gradient-boosted decision tree). **Results:** A total of 127 (11%) of 1127 pts were enrolled in the genotype-matched trials. Of 127 pts, 82 (65%) and 45 (35%) participated in phase 1 trials and phase 2/3 trials, respectively. The overall median travel distance and time were 38 km (interquartile range [IQR] 21–107) and 55 minutes (IQR 35–110), respectively. In multivariable regression, travel distance (≥100km vs. <100km) was not associated with the proportion of genotype-matched trial participation (9% vs. 12%; odds ratio [OR], 0.68; 95% confidence interval [CI], 0.42–1.07; P = 0.11); however, in pts with travel time ≥120 minutes, the proportion of genotype-matched trial participation was significantly lower than those with travel time < 120 minutes (7% vs. 13%; OR, 0.54; 95% CI, 0.32–0.89; P = 0.019). The proportion of genotype-matched trial participation decreased as travel time increased from <40 minutes to 40–120 minutes to ≥120 minutes (13% vs. 12% vs. 7%, respectively; OR, 0.67; 95% CI, 0.50–0.88; P = 0.006). Travel time was also identified as an important factor in the ML model, whereas low-income and residence in rural areas were of minor importance. **Conclusions:** Patients with travel time ≥120 minutes were less likely to participate in genotype-matched clinical trials than those with travel time <120 minutes. Regional disparities may be creating inequities in precision oncology, which warrant immediate action, including decentralization of clinical trials. Research Sponsor: None.