

Impact of Pain on Physical and Role Functioning in Adult Patients with Desmoid Tumors Treated with Nirogacestat

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Background: Desmoid tumors (DT) are characterized by locally aggressive growth, which can cause debilitating pain and functional impairment. This is the first study to date to describe the impact of pain on functioning in patients with DT on systemic therapy.

Methods: DeFi was a phase 3, international, double-blind, randomized, placebo-controlled trial to evaluate the efficacy and safety of nirogacestat (NIRO) in adults with progressing DT. Pain was self-reported using the BPI-SF worst pain intensity score (7-day average), and functioning was self-reported using the BPI-SF Pain Interference Index (PII; score range, 0–10), GODDESS DTIS PF (5-point Likert), and EORTC QLQ-C30 PF and RF (score range, 1–4). Pearson correlations between changes from baseline (BL) in pain and changes from BL in functioning were evaluated at the prespecified timepoint of cycle 10. Qualitative effects of reduced pain on functioning were calculated as the LS mean change from BL in functioning for patients on NIRO with clinically meaningful pain reduction (≥ 2 -point reduction from BL in BPI-SF worst pain intensity).

Results: Correlations between pain and functioning domains for patients on NIRO were moderate to strong for BPI-SF PII ($r = 0.79$), GODDESS DTIS PF ($r = 0.46$), and EORTC QLQ-C30 RF ($r = -0.41$). Patients on NIRO with clinically meaningful pain reduction reported consistent improvement in both physical and role functioning by cycle 10. The greatest item improvements in each domain were related to sleep (BPI-SF PII: LS mean, -4.22 ; 95% CI, -5.60 to -2.83), body mobility near the tumor (GODDESS DTIS PF: LS mean, -1.71 ; 95% CI, -2.65 to -0.77), taking a long walk (EORTC QLQ-C30 PF: LS mean, -0.90 ; 95% CI, -1.18 to -0.62), and pursuing hobbies/leisure activities (EORTC QLQ-C30 RF: LS mean, -1.04 ; 95% CI, -1.40 to -0.68). These raw LS mean scores correspond to a 30–43% improvement in functioning from BL (LS mean as a % of item score range). Additional subgroup analyses will be presented.

Conclusions: Patients with DT who had clinically meaningful pain reduction with NIRO consistently reported improvements in physical and role functioning.

BL, baseline; BPI-SF, Brief Pain Inventory-Short Form; CI, confidence interval; DT, desmoid tumors; EORTC QLQ-C30, European Organisation for Research and Treatment of Cancer Core Quality of Life Questionnaire; GODDESS DTIS, Gounder/Desmoid Tumor Research Foundation Desmoid Impact Scale; LS, least squares; NIRO, nirogacestat; PF, physical functioning; PII, Pain Interference Index; RF, role functioning.