Interim Report on the Safety and Efficacy of Longer-term Treatment With Nusinersen in Later-onset Spinal Muscular Atrophy (SMA): Results From the SHINE Study

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Objective: To present baseline and interim results from the SHINE study (NCT02594124) for participants with later-onset SMA (most likely to develop Type II or III SMA) who transitioned from CHERISH.

Background: Nusinersen is the first approved treatment for SMA. Several clinical trials demonstrated a favorable benefit:risk profile and established clinically meaningful efficacy on motor function across a broad spectrum of SMA populations; a significant effect on event-free survival was observed in infantile-onset SMA.

Design/Methods: SHINE is an open-label extension for participants in previous nusinersen studies, with dosing every 120 days after protocol amendment; initially 180 days for CHERISH participants. Safety/tolerability is the primary endpoint; secondary endpoints include achievement of WHO motor milestones, Hammersmith Functional Motor Scale - Expanded (HFMSE), and Revised Upper Limb Module. These integrated analyses focus on children treated with nusinersen or sham control in CHERISH who transitioned to SHINE.

Results: In CHERISH, 84 participants received nusinersen and 83 transitioned to SHINE; all 42 participants in the sham control group transitioned. Baseline data are presented for 3 groups: previous sham control (CHERISH data; n=42); previous sham control/SHINE data (n=42); previous nusinersen in CHERISH/SHINE data (n=84). Median (range) age at first dose/sham procedure was 43.3 (25-90), 58.2 (40-107) and 49.7 (25-111) months, and median age at symptom onset was 11.0 (6-20), 11.0 (6-20), and 10.0 (6-20) months; 50%, 50% and 55% were female, respectively. Mean baseline (SD) WHO motor milestones was 1.5 (1.02), 1.4 (1.11) and 1.4 (0.96); mean (SD) HFMSE score was 19.9 (7.23), 19.8 (8.39), and 22.4 (8.33), in the 3 groups respectively. Results from an interim analysis with an October 15, 2018 data cutoff will be presented.

Conclusions: Continued analysis of data from children treated with nusinersen via the SHINE study will increase the information available on the long-term safety/tolerability and efficacy of repeated nusinersen doses.