Interim Report on the Safety and Efficacy of Longer-Term Treatment With Nusinersen in Infantile-Onset Spinal Muscular Atrophy (SMA): Updated Results From the SHINE Study

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Objective: To report interim results from the SHINE study (NCT02594124) for individuals with infantile-onset SMA (most likely to develop Type I) who transitioned from ENDEAR.

Background: Nusinersen has demonstrated a favorable benefit:risk profile and shown significant and clinically meaningful efficacy on motor function across a broad spectrum of SMA populations and on event-free survival (EFS; time to death or permanent ventilation) in infantile-onset SMA. SHINE is an open-label extension study for infants/children who previously participated in nusinersen clinical trials.

Design/Methods: Nusinersen doses were initially administered according to participant’s previous trial cohort/regimen. The primary endpoint is safety/tolerability; secondary endpoints include achievement of HINE-2 motor milestones and EFS.

Results: The cutoff date for the previous interim analyses was June 30, 2017; 89 infants transitioned from ENDEAR, 65/81 were previously randomized to nusinersen and 24/41 to sham-control. Within SHINE only, 83 infants had an adverse event (AE). Infants who received sham-control in ENDEAR and nusinersen in SHINE (n=20/24) and those who received nusinersen in ENDEAR and SHINE (n=74/81; pooled ENDEAR/SHINE data) demonstrated continued improvements in HINE-2 total score from nusinersen initiation to last observed visit (mean [95%CI] change: 1.1 [0.20–1.90] and 5.8 [4.58–7.04], respectively). Median (95%CI) EFS time among sham-control infants in ENDEAR was 22.6 (13.6–31.3) weeks vs 73.0 (36.3–NA) weeks for those who received nusinersen in ENDEAR and SHINE. Results from an interim analysis with an October 15, 2018 cutoff date will be presented.

Conclusions: At the time of the previous data cutoff, motor function and EFS continued to improve in infants who initiated nusinersen in ENDEAR and motor function stabilized or started to show improvement in those who initiated nusinersen in SHINE. Data from more recent analyses will provide additional information on the long-term efficacy and safety of nusinersen in infantile-onset SMA.