patients and after treatment initiation for nusinersen-treated patients.

**Results:** A total of 349 SMA1 patients (median age=1 year; 55.6% female) with median follow-up of 7.9 months were included. The proportion of patients receiving mechanical ventilation, nutritional support, and physical therapy/rehabilitation was 46.4%, 46.1%, and 22.6%, respectively. Patients had, on average, 59.4 days with medical visits/year (14.1 inpatient, 13.4 respiratory failure-related). The 45 nusinersen-treated patients had, on average, 56.6 days with medical visits/year (4.6 inpatient, 11.4 respiratory failure-related). Excluding nusinersen-related costs, mean healthcare costs PPPY were $137,627 (median: $43,167) for all patients and $92,618 ($29,425) for nusinersen-treated patients. Mean nusinersen-related costs were $191,909 ($144,487) per month for the first 3 months post-initiation and $36,882 ($16,132) per month thereafter. **Conclusions:** HRU and costs associated with SMA1 are substantial, even among patients treated with nusinersen.

**P.063**

**SUNFISH Part 1 results and Part 2 trial design in patients with type 2/3 spinal muscular atrophy (SMA) receiving risdiplam (RG7916)**


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**Background:** SMA is characterized by reduced levels of survival of motor neuron (SMN) protein from deletions and/or mutations of the SMN1 gene. While SMN1 produces full-length SMN protein, a second gene, SMN2, produces low levels of functional SMN protein. Risdiplam (RG7916/RO7034067) is an investigational, orally administered, centrally and peripherally distributed small molecule that modulates pre-mRNA splicing of SMN2 to increase SMN protein levels. **Methods:** SUNFISH (NCT02908685) is an ongoing multicenter, double-blind, placebo-controlled, operationally seamless study of risdiplam in infants aged 1–7 months with Type 1 SMA and two SMN2 gene copies. Exploratory Part 1 (n=21) assesses the safety, tolerability, pharmacokinetics and pharmacodynamics of different risdiplam dose levels. Confirmatory Part 2 (n=40) is assessing the safety and efficacy of risdiplam. **Results:** In a Part 1 interim analysis (data-cut 09/07/18), 93% (13/14) of babies had ≥4-point improvement in CHOP-IN TEND total score from baseline at Day 245, with a median change of 16 points. The number of infants meeting HINE-2 motor milestones (baseline to Day 245) increased. To date (data-cut 09/07/18), no drug-related safety findings have led to patient withdrawal. No significant ophthalmological findings have been observed. **Conclusions:** In SUNFISH Part 1, risdiplam improved motor function in infants with Type 1 SMA.

**P.065**

**AVXS-101 gene-replacement therapy (GRT) in presymptomatic spinal muscular atrophy (SMA): study update**

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**Background:** SMA is a neurodegenerative disease caused by biallelic deletion/mutation of SMN1. Copies of a similar gene (SMN2) modify disease severity. In a phase 1 study, SMN GRT onasemnogene abeparvovec (AVXS-101) improved outcomes of symptomatic SMA patients with two SMN2 copies (2xSMN2) dosed ≤6 months. Because motor neuron loss can be insidious and disease progression is rapid, early intervention is critical. This study evaluates AVXS-101 in presymptomatic SMA newborns. **Methods:** SPRINT is a multicenter, open-label, phase 3 study enrolling ≥27 SMA patients with 2–3xSMN2. Asymptomatic infants ≤6 weeks receive a one-time intravenous AVXS-101 infusion (1.1x10^{14} vg/kg). Safety and efficacy are