

Patient-led Listening Session: The Shifting Landscape of Spinal Muscular Atrophy (SMA) and Unmet Needs Across the SMA Populationⁱ

Objective of session:

In recent years, progress in the SMA treatment landscape has been profound and rapid, resulting in FDA approval of three SMN-upregulating therapeutics. These treatments, together with the fact that 97% of newborns in the U.S. are now screened for SMA, have resulted in a quickly evolving disease course. However, significant unmet needs remain for those individuals who are treated later in life, and new needs will arise in individuals who were treated early in life as they age and develop. The goal of this session is to provide a forum in which six SMA patient advocates, each with a different disease and treatment experience, can tell their stories and describe their unmet medical needs.

Summary of topics discussed:

Topic: Gratitude for existing FDA-approved SMA Treatments

- All six patient advocates (see below for descriptions) expressed gratitude for the three FDA-approved, SMN-dependent treatments for SMA, saying that these treatments have enabled significant reduction in burden of disease and a marked increase in quality of life.

Topic: Combination/Add-on Therapies to Improve Symptoms and Increase Independence

- Patient advocates spoke of the need for combination/add-on therapies to address treatment gaps for SMA-affected individuals who have been treated post-symptomatically, as well as those who were treated early in life but still have unmet medical needs.
- Two of the patient advocates who are parents mentioned that although their children have experienced some motor function gains on SMN-dependent therapies, they have not gained much strength in the muscles required for vocalizing, swallowing, and smiling (bulbar muscles).
 - Patient Advocate 1 described how one of her sons, who was treated when he was 12 days old and who is now 6 years old, has a hard time swallowing and has choked twice at home, each time requiring the Heimlich Maneuver and CPR.
 - As the mother of 5-year-old twins who are both affected by SMA, Patient Advocate 3 said that her boys, who began treatment at 7.5 months of age, still experience weakness in their face and throat muscles. They have never been able to eat orally. As a result, they are becoming self-conscious about this and about their need for periodic suction to prevent them from choking on their own saliva. She added that both the boys have lost their ability to smile.
- Patient Advocates 4, 5, and 6 were all treated for SMA later in life after symptoms developed, and each of them spoke of the need for combination/add-on therapies that will facilitate motor function gains and allow them to maintain or increase their independence.
 - Patient Advocate 4, who is 16 years of age and was first treated for SMA in 2017, would like to gain more strength in her neck so that she can drive like other kids her age.
 - Diagnosed as a young child but not treated until adulthood, Patient 5 described how modest gains in strength can be life-altering. For example, gaining the ability to lift one's arms just two inches higher can mean being able to eat independently rather than be fed.
 - Patient Advocate 6 said that treatment has given her enough strength to do things herself at work rather than ask for help from a coworker. Her "ultimate goal" is to gain enough strength to be able to use the toilet on her own.

Topic: Other Research Concerns

- Patient Advocate 2, the mother of a 16-month-old boy who received SMA treatment when he was 7 days old, expressed concerns about the unknown long-term side effects of current treatments, and she stressed the need for post-marketing surveillance and the collection of real-world data.
- Many of the Patient Advocates expressed strong reluctance to participate in or enroll their children in trials that have a placebo arm. Several stated the desire to stay on their current treatment but said they might participate in or allow their children to participate in a trial with a placebo arm if they could continue their current therapeutic regimen.
- Excessive travel was cited as a barrier to participation in clinical trials. Patient Advocate 6 said she would be more likely to participate if the trial site was located where she worked and lived. Patient Advocate 1 said that she and her husband had to drive from Wisconsin to Baltimore for site visits while participating in one clinical trial.

Partner organization that helped identify and prepare patient community participants: Cure SMA

FDA divisions represented:

- Office of the Commissioner/Office of Patient Affairs (organizer).
- Center for Biologics Evaluation and Review (CBER): Office of Tissues and Advanced Therapies; Rare Disease Program; Office of Cellular, Tissue, and Gene Therapy; Office of the Center Director; Division of Clinical Evaluation & Pharmacology; Office of Biostatistics and Pharmacovigilance.
- Center for Drug Evaluation and Research (CDER): Division of Gastroenterology and Division of Neurology 1, Office of New Drugs.
- Center for Devices and Radiologic Health (CDRH): Office of Strategic Partnerships and Technology Innovation (OST), Patient Science and Engagement Program.
- Office of Clinical Policy and Programs: Office of Orphan Products Development and Office of Pediatric Therapeutics.

Patients represented:

- Patient Advocate 1 is the mother of three children who are affected by SMA each treated at a different point in disease course.
- Patient Advocate 2 is the mother of an SMA-affected 16-month-old boy who was treated pre-symptomatically.
- Patient Advocate 3 is the mother of twin 5-year-old boys living with SMA who were treated post-symptomatically at 7.5 months of age.
- Patient Advocate 4 is a sixteen-year-old affected by SMA. She was diagnosed at age 2 but did not receive treatment until 2017.
- Patient Advocate 5 is an SMA-affected adult and was diagnosed as an 18-month-old child. He did not receive treatment until adulthood.
- Patient Advocate 6 is an adult living with SMA. She was diagnosed at 2 years old and was not treated until adulthood.

Disclaimer: Discussions in FDA Patient Listening Sessions are informal. All opinions, recommendations, and proposals are unofficial and nonbinding on FDA and all other participants. This report reflects the [organization]'s account of the perspectives of patients and caregivers who participated in the Patient Listening Session with the FDA. To the extent possible, the terms used in this summary to describe specific manifestations of [disease or condition], health effects and impacts, and treatment experiences, reflect those of the participants. This report is not meant to be representative of the views and experiences of the entire [disease or condition] patient population or any specific group of individuals or entities. There may be experiences that are not mentioned in this report.