Collaborative data collection by TREAT-NMD Registries to support post-marketing surveillance in Spinal Muscular Atrophy

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Background

The TREAT-NMD Global Network of SMA Registries (n=52*) collect a common core dataset and are governed by the TREAT-NMD Global Database Oversight Committee (TGDOC). Researchers and industry can request anonymised and aggregated data via the committee, offering a single point of access to this diverse and extensive dataset.

The TREAT-NMD SMA core dataset containing 23 data items was established in 2008 for clinical trial readiness and recruitment. In the current SMA landscape there is a need for more widespread longitudinal data collection to support future research and post marketing surveillance (PMS) requirements for emerging therapies. With this in mind TREAT-NMD reviewed and expanded the core dataset for their SMA Registries.

Workshops were held in May 2017 and June 2018 involving clinicians, physiotherapists, registry curators, patient representatives, industry representatives, and other stakeholders from across the world. These led to the development of an expanded SMA dataset for TREAT-NMD registries, containing 131 data items.

*number of registries has increased from 49 to 52 during past 6 months

Methods

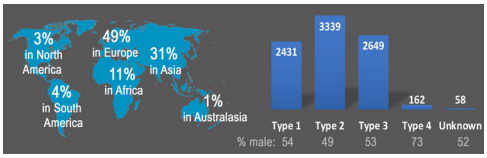
Based on an initial pilot study of 12 TREAT-NMD SMA registries (both clinician- and patient-reported), and a mapping and scoping exercise across all SMA registries a plan was developed to implement the expanded SMA dataset across all 52 TREAT-NMD SMA registries over a 3 year time frame. The phased implementation allows for feedback on feasibility, helping develop strategies to mitigate issues and concerns for future implementation.

Currently, year 1 of implementation includes 8 national registries in addition to the pilot 12 who are launching and collecting the expanded dataset. Feedback throughout the process highlights individualized needs for each participating nation, including platform requirements, ethics and consenting for an amended dataset, and standardization across clinical centres.

Results

The expanded dataset highlights the power of the global registries, with substantial numbers of registered patients across the globe. To date, registries note concerns with specific data items including feasibility and standardized collection of motor outcome assessments, particularly for those not on therapy, as well as hospitalizations, and SAE's. 27 out of 52 registries responded to a Treat NMD internal survey request.

TREAT-NMD Network SMA Patient Characteristics



Expanded Dataset Implementation across the TREAT-NMD Network

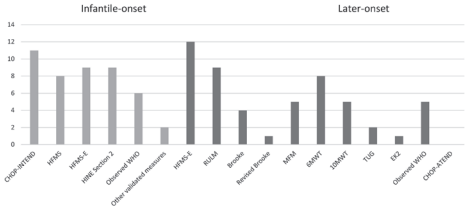
Implementation of recording of disease-modifying therapies for SMA

73%	Are recording disease-modifying therapies for SMA for each patient
44%	Start date
44%	Stop date
31%	Reason for stopping
33%	Dosage, frequency, & route of administration of disease-modifying therapy
22%	Compliance with current recommended dosing schedule
19%	Reason for variation from recommended dosing schedule
44%	Recording all other therapeutic interventions received in last 12 months

Implementation of recording of genetic test results

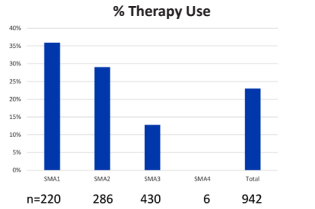
96%	collect genetic confirmation of SMA
93%	collect type of mutation in SMN1
85%	collect SMN2 copy number

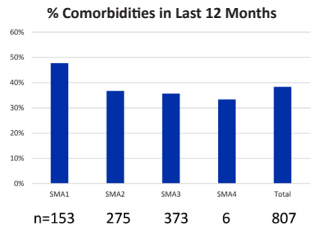
Motor measures collected in SMA

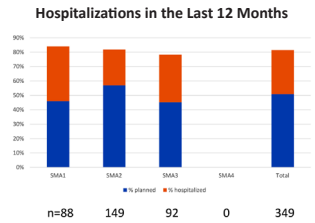


Half of registries have implemented collection of motor measures, however the majority of registries are yet to implement collection of patient reported outcome measures (PROMs).

Example Data Output from Expanded Dataset

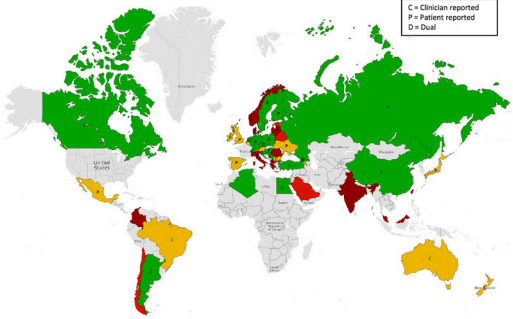


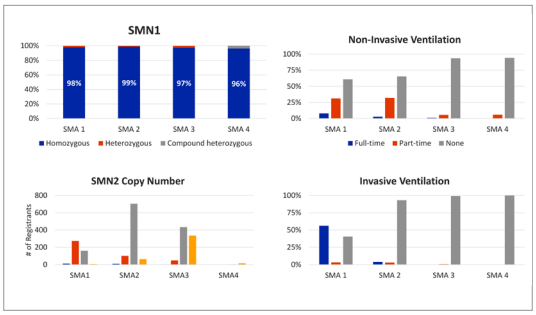




Comorbidities	SMA1	SMA2	SMA3	SMA4	Total
Infectious and Parasitic	1	0	4	0	5
Neoplasms	1	0	5	0	6
Blood and Blood-forming	1	7	3	0	11
Endocrine, Nutritional, Metabolic	32	23	48	0	103
Mental, Behavioral, Neurodevelopmental	2	5	14	0	21
Nervous System	4	6	8	1	19
Eye and Adnexa	4	5	5	0	14
Ear and Mastoid Process	0	0	0	0	0
Circulatory	9	17	41	1	68
Respiratory	74	89	78	1	242
Digestive	26	25	18	0	69
Skin and Subcutaneous	2	7	5	0	14
Musculoskeletal	43	78	78	4	203
Genitourinary	11	15	22	1	49
Preganancy, Childbirth, Puerperium	3	0	0	0	3
Perinatal Period	4	0	0	0	4
Chromosomal Abnormalities	0	4	5	0	9
Other	1	2	3	0	6

TREAT-NMD SMA Registries Expanded Dataset Collection





Conclusion

The expansion of the SMA dataset for safety and effectiveness highlights the extensive collaborative work across the community. The roll-out of the expanded data set across all 52 TREAT-NMD SMA registries is taking place over a 3 year project. In order to support data collection of the expanded SMA dataset, TREAT-NMD is developing an IT platform for affiliated registries to use either directly, or to upload data from their own platform. Annual dataset reviews will be undertaken to assess the continued feasibility and relevance of data items, and additional support required across registries to ensure high quality data collection, while limiting increased burden on clinicians, research staff, or patients.

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