Role of biomarkers in advancing access to treatments for individuals with neurocognitive or neuronopathic MPS conditions

Tuesday, 18 March 2025
9.00am–4.30pm (CET)
Renaissance Hotel, Schiphol Airport, Amsterdam

Developing treatments for individuals with progressive neurocognitive or neuronopathic diseases such as Mucopolysaccharidosis (MPS) presents several significant challenges. **Biomarkers can, however, play a critical role in assessing the efficacy of treatments, by providing objective measures of disease progression or response to therapy.**

The aim of this meeting is to bring clinical and scientific experts, together with regulators, decision makers, commissioners, industry and patient organisations to facilitate the global sharing of information and discussion and to highlight the importance of integrating biomarkers into regulatory frameworks.

Hosted by:

MPS Society (UK) in association with International MPS Network

Chairs:

Prof Simon Jones
Prof Maurizio Scarpa

Welcome from Bob and Kim

Welcome to this important meeting, supported and funded by the MPS Society (UK) and the International MPS Network. This meeting will explore the role of biomarkers in clinical trials, with a focus on heparan sulfate as a key example in MPS diseases.

Given the complexity of MPS, biomarkers like heparan sulfate are essential for tracking disease progression and helping us understand how to slow neurodegeneration. Since neurological decline often happens after irreversible damage, traditional trial methods can struggle to assess treatment efficacy. Biomarkers, however, provide the opportunity for earlier evaluation of therapeutic impact, enabling timely interventions and ultimately improving patient outcomes.

As leaders in the rare disease community, we understand the urgency in addressing these challenges. This meeting brings together key stakeholders to discuss the scientific foundations, regulatory considerations, and clinical applications of heparan sulfate, all with the shared goal of advancing MPS treatment strategies.

By leveraging science to develop innovative endpoints, we are opening the door to transformative progress and empowering individuals with MPS to "live a rare life better".

Meeting overview

Developing effective treatments for individuals with progressive neurocognitive or neuronopathic diseases, such as Mucopolysaccharidosis (MPS), involves navigating complex challenges. While the biochemistry of these diseases is well understood, traditional methods like placebo-controlled clinical trials often face significant ethical dilemmas due to the progressive and irreversible nature of these conditions.

Biomarkers offer a promising solution, providing objective measurements of disease progression and treatment response. For MPS, biomarkers such as heparan sulfate (HS) levels in cerebrospinal fluid (CSF) can offer more direct insights into treatment efficacy compared to clinical symptoms alone.

As reliance on placebo-controlled trials becomes increasingly difficult and unethical, particularly for neurocognitive and neuronopathic disorders, the integration of biomarkers into clinical evaluations is crucial. However, the global acceptance of biomarkers as primary endpoints remains inconsistent, presenting challenges for patient access to clinical trials and the worldwide approval of new therapies.

To address these challenges, the need for global collaboration in the standardization and validation of biomarkers has never been more urgent.

Purpose of meeting

This meeting aims to bring together clinical and scientific experts, regulatory bodies, decision makers, industry leaders, and patient organizations to foster global information exchange, stimulate discussions, and emphasize the importance of incorporating biomarkers into regulatory frameworks for advancing treatment options in MPS and similar diseases.

Organsising committee

Meeting Hosts

Bob Stevens
Group CEO of MPS Society and Rare Disease Research Partners

Kim Angel
Executive Director, International MPS Network (IMPSN)

Chief Programme Manager

Sophie Thomas
Senior Head of Patient Services and Clinical Liaisons, MPS Society

Clinical & Scientific Advisors

Professor Simon Jones
Consultant in Paediatric Inherited Metabolic Disease, Honorary MAHSC Professor of paediatrics and translational medicine, Medical Director NIHR Manchester children's clinical research facility & hospital

Professor Maurizio Scarpa
Director of the Regional Coordinating Centre for Rare Diseases, Professor of Paediatrics at the Dept. for the Woman and Child Health, University of Padova, Italy, Co-Founder of the Brains For Brain Foundation, Coordinator of the European Reference Network for Hereditary Metabolic Diseases

Dr Fiona Stewart MBE
Trustee & Chair of CSAC at MPS Society

Meeting Moderator

Sheela Upadhyaya
Life Sciences Consultant -Expertise in Rare Disease

Meeting Agenda			
09:00	Opening and run of day	Sheela Upadhyaya	Life Sciences Consultant - Expertise in Rare Disease
09:05	Welcome	*Bob Stevens*	*MPS Society & RDRP*
09:10	Introduction & scene setting	*Maurizio Scarpa &* *Simon Jones*	*University Hospital Udine, Italy* *University of Manchester, UK*
Part 1 - Clinical & Patient perspective			
09:20	MPS disorders – An overview	*Fiona Stewart*	*MPS Society, CSAC*
09:30	The uncertain path towards approval	*Mark Dant*	*Ryan Foundation, USA*
	Post trial experience	*Kim Stephens*	*Muenzer MPS Research & Treatment Center, USA*
	Community perspectives: Acting on opportunity	*Cara O'Neill*	*Cure Sanfilippo Foundation, USA*
10:00	Heparan sulfate as primary cause of the neurological derangement in Mucopolysaccharidosis	*Maurizio Scarpa*	*University Hospital Udine, Italy*
10:10	Clinical trials need biomarkers	*Simon Jones*	*University of Manchester, UK*
10:20	Discussion	*Moderator led*	
10:30	Break		
Part 2 - What does the science tell us? (Rationale for Heparan sulfate as a biomarker)			
10:50	Development of heparan sulfate assays	*Frits Wijburg*	*Amsterdam UMC, Academic Medical Center*
11:00	Determining the origin of CSF heparan sulfate using biological compartment specific gene therapy	*Grant Austin*	*Washington University School of Medicine Department of Pediatrics USA*
11:10	Comparative and preclinical medicine	*Matthew Ellinwood*	*National MPS Society, USA*
11:20	The role of heparan sulfate in advancing clinical trial development	*David Whiteman*	*MPS Society, CSAC*
11:30	Impact of trial failure on clinicians and patients	*Spyros Batzios*	*Great Ormond Street Hospital, London, UK*
11:40	Discussion	*Moderator led*	
11:55	Lunch		
Part 3 - Currently accepted and evolving evidence			
12:45	Heparan sulfate in CSF accepted as a biomarker in Genistein trial	*Simon Jones*	University of Manchester, UK
13:00	Tividenofusp alfa (DNL310) Clinical Trial for MPS II	*Carole Ho*	Denali Therapeutics

13:15	The Use of Heparan Sulfate as a Surrogate Biomarker in MPS II as Part of Investigational RGX-121 Gene Therapy Program (CAMPSIITE® Phase I/II/III)	*Nidal Boulos*	Regenxbio
13:30	Treatment with UX111 gene therapy rapidly reduced heparan sulfate (HS) exposure in cerebrospinal fluid (CSF) and improved long-term cognitive function in children with mucopolysaccharidosis IIIA (MPS IIIA)	*Heather Lau*	Ultragenyx
13:45	Clinical Evidence OTL-201 - HSC-GT Approach, Proof of Concept in Neurometabolic Disorders and OTL-201 Registrational Study Design	*Leslie Meltzer*	Orchard Therapeutics
14:00	Discussion	*Moderator led*	
14:20	Break		

Part 4 - Views from the Regulators

14.35	Overview and outcomes from the Reagan Udall Foundation public workshop	*Susan Winckler*	Reagan-Udall Foundation for the FDA, USA
	Overview and outcomes from the Reagan Udall Foundation public workshop from an academic perspective	*Joseph Muenzer*	University of North Carolina at Chapel Hill, USA
14.55	Facilitating accelerated approval	*Peter Marks*	Center for Biologics Evaluation and Research, FDA, USA
15.10	European Medicines Agency (EMA) /EU Network presentation	*Emmely de Vries, Jan Span*	EMA / EU Network representatives
15.25	Medicines & Healthcare products Regulatory Agency (MHRA) presentation	*Shirley Hopper*	MHRA, UK
15.40	Discussion	*Moderator led*	

Part 5 – Summary & Final thoughts

16.00	Panel discussion (Cara O'Neill, Joseph Muenzer, Simon Jones, Matthew Ellinwood)	*Moderator led*	
16.20	Closing remarks	*Kim Angel*	International MPS Network (IMPSN)
16.30	End		

Photography and filming policy

Please note that photographs and footage will be taken throughout the Biomarker meeting. These will be used by both the MPS Society and International MPS Network for marketing and publicity in our publications, on our website and in social media or in any third-party publication. Please contact the event organiser if you have any concerns or if you wish to be exempted from this activity.

This meeting is being delivered both in person and virtually and a recording of the meeting will be made available in due course.

Society for Mucopolysaccharide Diseases
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