4th Translational Research Conference:
Pathophysiology and Clinical Advances in Sickle Cell Disease and Thalassemia
March 14-16, 2025 – Malahide (Dublin), Ireland
Chairpersons : Maria-Domenica Cappellini, Michaela Fontenay, Alexis A. Thompson

Friday, March 14th, 2025

08:15–08:25 Welcome

SESSION I – Update on Pathophisiology on Sickle Cell Disease , Thalassemia and Normal Red Blood Cell
Chairs: Corrina McMahon (Dublin), Alexis A. Thompson (Philadelphia)

08:25-08:30	Introduction	Corrina McMahon (Dublin) Alexis A. Thompson (Philadelphia)
08:30-08:45	Update on pathophysiology of thalassemia	*Ali Taher (Beirut) Virtual*
08:45-09:00	Update on pathophysiology in sickle cell disease	Olivier Hermine (Paris)
09:00-09:05	*Discussion*	
09:05-09:20	Metabolism and the marrow microenvironment in normal red cells	Theodosia Kalfa (Cincinnati)
09:20-09:25	*Discussion*	
09:25-09:40	Shifting tides: from ineffective to excessive red blood cell production	Stefano Rivella (Philadelphia)
09:40-09:45	*Discussion*	
09:45-09:52	*Brief oral communication* *Irf5 contributes to imbalanced blood production during aging through iron sensing within erythromyeloblastic islands*	*Lionel Blanc (Manhasset)*
09:52-09:55	*Discussion*	
09:55-10:25	*Panel discussion*	

10:25-10:50 Coffee Break

SESSION II – Iron and Erythropoiesis
Chairs: Martina Muckenthaler (Heidelberg), John Porter (London)

10:50-10:55	Introduction	Martina Muckenthaler (Heidelberg) John Porter (London)
10:55-11:10	Cellular and Systemic regulation of iron metalbolism	Martina Muckenthaler (Heidelberg)
11:10-11:15	*Discussion*	
11:15-11:30	Hepcidin regulation by FLG1 and ERFE	Léon Kautz (Toulouse)
11:30-11:35	*Discussion*	

11:35-11:50	Iron and erythropoiesis	Laura Silvestri (Milan)
11:50-11:55	*Discussion*	
11:55-12:02	*Brief oral communication* *Improvement of Iron Overload Parameters in Patients with Transfusion-Dependent β-Thalassemia Treated with Luspatercept: Data from the Phase 3b Long-Term Rollover Study Following the BELIEVE Trial*	*John Porter (London)*
12:02-12:05	*Discussion*	
12:05-12:35	*Panel discussion*	
12:35-14:05	***Lunch***	

SESSION III – Inflammation in Sickle Cell Disease
Chairs: Michaela Fontenay (Paris), Mohandas Narla (New York)

14:05-14:10	Introduction	Michaela Fontenay (Paris) Mohandas Narla (New York)
14:10-14:25	Inflammatory signals in erythropoiesis	Mohandas Narla (New York)
14:25-14:30	*Discussion*	
14:30-14:45	Inflammation in sickle cell disease	Lubka T. Roumenina (Paris)
14:45-14:50	*Discussion*	
14:50-15:05	Targeting the HRI pathway in sicke cells and MDS	Simona Colla (Houston)
15:05-15:10	*Discussion*	
15:10-15:17	*Brief oral communication* *RAP-536 Ameliorates Anemia and Vaso-Occlusion in Experimental Model of Sickle Cell Disease*	*Thiago Trovati Maciel (Paris)*
15:17-15:20	*Discussion*	
15:20-15:50	*Panel discussion*	
15:50-16:20	***Coffee break***	

SESSION IV – Dyserythopoiesis in Thalassemia
Chairs: Maria Domenica Cappellini (Milan), Stefano Rivella (Philadelphia)

16:20-16:25	Introduction	Maria-Domenica Cappellini (Milan) Stefano Rivella (Philadelphia)
16:25-16:40	A glutamine metabolic switch drives erythropoiesis	Jian Xu (Dallas)
16:40-16:45	*Discussion*	
16:45-17:00	Oxidative Stress and Ineffective Erythropoiesis in Hemoglobinopathies	Sara El Hoss (Paris)
17:00 -17:05	*Discussion*	

17:05-17:20	Pathophysiology of Inflammation in b-thalassemia and sickle cell anemia	Francesca Vinchi (New York)
17:20-17:25	*Discussion*	
17:25-17:32	*Brief oral communication* *Impact of luspatercept in erythropoiesis in a real-world cohort of transfusion-dependent beta-thalassemia patients*	*Valentina Brancaleoni (Milan)*
17:32-17:35	*Discussion*	
17:35-18:05	*Panel discussion*	
18:10-20:00	**Mentored Poster Walks and Welcome Get Together stand up buffet dinner** **Biology Poster Leaders: Stefano Rivella (Philadelphia), Léon Kautz (Toulouse)** **Clinical Poster Leaders: Maria Domenica Cappellini (Milan), Antonis Kattamis (Athens)**	

Saturday, March 15th, 2025

09:00-10:00	**3 Simultaneous Meet the Expert sessions (non-clinical)**	
	1. Iron and erythropoiesis	Laura Silvestri (Milan)
	2. Pathophysiology of Inflammation in b-thalassemia and sickle cell anemia	Francesca Vinchi (New York)
	3. Healthy aging versus inflamm-aging	Valentina Bollati (Milan)
10:00-10:30	***Coffee break***	

SESSION V – Premature Aging in Sickle Cell and Thalassemia
Chairs: Maria-Domenica Cappellini (Milan), John Porter (London)

10:30-10:35	Introduction	Maria-Domenica Cappellini (Milan) John Porter (London)
10:35-10:50	Healthy aging versus inflamm-aging	Valentina Bollati (Milan)
10:50-10:55	*Discussion*	
10:55-11:10	Aging and sickle cell disease	Lucia de Franceschi (Verona)
11:10-11:15	*Discussion*	
11:15-11:30	Aging in thalassemia	John Porter (London)
11:30-11:35	*Discussion*	
11:35-11:42	*Brief oral communication* *Premature aging and exhaustion of haematopoietic stem cells in sickle cell disease*	*Julien Grenier (Marseille)*
11:42-11:45	*Discussion*	
11:45-12:15	*Panel discussion*	
12:15-13:45	***Lunch***	

SESSION VI – Fetal Hemoglobin Control
Chairs: Stuart Orkin (Boston), Antonella Ronchi (Milan)

13:45-13:50	Introduction	Stuart Orkin (Boston) Antonella Ronchi (Milan)
13:50-14:05	Control of fetal hemoglobin	Stuart Orkin (Boston)
14:05-14:10	*Discussion*	
14:10-14:25	Fetal silencing	Antonella Ronchi (Milan)
14:25-14:30	*Discussion*	
14:30-14:45	Inhibition of FGF23 is a therapeutic strategy to target hematopoietic stem cell niche defects in β-thalassemia	Annamaria Aprile (Milan)
14:45-14:50	*Discussion*	
14:50-15:20	*Panel discussion*	
15:20-15:50	***Coffee break***	

SESSION VII – Novel Pharmacologic Approaches to Sickle Cell Disease and Thalassemia
Chairs: Maria-Domenica Cappellini (Milan), Kevin Kuo (Toronto)

15:50-15:55	Introduction	Maria-Domenica Cappellini (Milan) Kevin Kuo (Toronto)
15:55-16:10	Luspatercept in clinical trials and in real life	Raffaella Origa (Cagliari)
16:10-16:15	*Discussion*	
16:15-16:30	Mitapivat in TDT snd NTDT	Kevin Kuo (Toronto)
16:30-16:35	*Discussion*	
16:35-16:50	What new in SCD than genome editing?	Marianne de Montalembert (Paris)
16:50-16:55	*Discussion*	
16:55-17:02	*<u>Brief oral communication</u>* *Therapeutically Targeting Heme-Regulated Inhibitor Kinase Improves Aberrant Erythropoiesis in Patients with Myelodysplastic Syndromes with Ringed Sideroblasts or Sickle Cell Disease*	*Vera Adema (Houston)*
17:02-17:05	*Discussion*	
17:05-17:35	*Panel discussion*	

Sunday, March 16th, 2025

07:30-08:30	**3 Simultaneous Meet the Expert Sessions (Clinical)**	
	1. Novel therapies in SCD lights and shadows	Lucia de Franceschi (Verona)
	2. Novel therapiies in Thalassemia: lights and shadows	Maria Domenica Cappellini (Milan)
	3. Adult thalassemia patients	Perla Eleftheriou (London)

SESSION VIII – Novel Genomic Approaches to Sickle Cell and Thalassemia
Chairs: Alexis A. Thompson (Philadelphia), Maria Domenica Cappellini (Milan)

08:35-08:40	Introduction	Alexis A. Thompson (Philadelphia) Maria-Domenica Cappellini (Milan)
08:40-08:55	Gene therapies for sickle cell disease and thalassemia	Alexis A. Thompson (Philadelphia)
08:55-09:00	*Discussion*	
09:00-09:15	Genome diting in sickle cell disease and thalassemiath	*Franco Locatelli (Rome)*
09:15-09:20	*Discussion*	
09:20-09:35	In vivo hematopoietic stem cell modification by mRNA delivery	Laura Breda (Philadelphia)
09:35-09:40	*Discussion*	
09:40-09:47	*Brief oral communication* *Transcriptome reprogramming and myeloid skewing of hematopoietic stem and progenitor cells in sickle cell anemia*	*Bérengère Koehl (Paris)*
09:47-09:50	*Discussion*	
09:50-10:20	*Panel discussion*	
10:20-10:50	***Coffee break***	

SESSION IX – Case Discussions
Chairs: Antonis Kattamis (Athens), Marianne de Montalembert (Paris)

10:50-10:55	Introduction	Antonis Kattamis (Athens) Marianne de Montalembert (Paris)
10:55-11:10	What to do today in a child with sickle cell disease?	*Raffaella Colombatti (Padova) Virtual*
11:10-11:25	What to do today in a child with Thalassemia	Antonis Kattamis (Athens)
11:25-11:30	*Discussion*	
11:30-11:45	What to do today in an adult with Thalassemia	Perla Eleftheriou (London)
11:45-11:50	*Discussion*	
11:50-11:57	*Brief oral communication* *Luspatercept Improves Fatigue-Related QoL through 5 Years of Treatment in Non-Transfusion Dependent Beta-Thalassemia*	*Maria-Domenica Cappellini (Milan)*
11:57-12:00	*Discussion*	
12:00-12:30	*Panel discussion*	
12:30-12:45	***Closing Remarks***	

MEETING CLOSURE