

The transfusion of red blood cells (RBCs) is a life-saving intervention for millions of chronically or acutely transfused recipients worldwide every year. Ten years ago a highly debated retrospective clinical study suggested the potential negative association between storage "age of blood" and transfusion outcomes. This controversial observation fueled the debate about the potential clinical relevance of the so-called "storage lesions", the wide variety of biochemical and morphological alterations that RBCs undergo during storage, among which oxidative damage plays a crucial role. Ten years later, a series of comprehensive randomized clinical trials (RCTs) have provided reassuring evidence about the lack of a significant difference between fresh blood and standard of care, at least for the specific categories of recipients enrolled in those RCTs. On the other hand, since 2009 various laboratory studies, mainly based on omics approaches, have provided unprecedented information on the molecular and metabolic basis of storage lesions showing that most probably RBC storage time is not an accurate surrogate for RBC quality and that there is a need to establish which parameters do reflect optimal transfusion efficacy and safety. This confirms the need to improve our understanding of storage lesions as a critical step towards the introduction of improved blood processing and storage strategies, as well as carrying out a more in-depth investigation into the biology of the donor and the recipient along with the evolution of storage lesions per se. The ultimate goal should be to provide optimally stored RBCs in order to promote radical improvements in the quality, safety, efficacy and cost of transfusion and patient outcomes.

Hemanext has developed an innovative storage system for RBCs that is designed to preserve their efficacy and safety during storage. This technology enables the storage of RBCs under anaerobic conditions, which prevents oxidative damage and alleviates many of the signs associated with storage lesion development. It will be made available as a medical device to be applied in blood establishments for the production of RBCs for transfusion with the aim to improve the clinical outcome in chronically and acutely transfused patients.



SCIENTIFIC COORDINATOR

Giancarlo Maria Liumbruno
Director of Italian National Blood Center

By invitation only
Dedicated to selected Stakeholders

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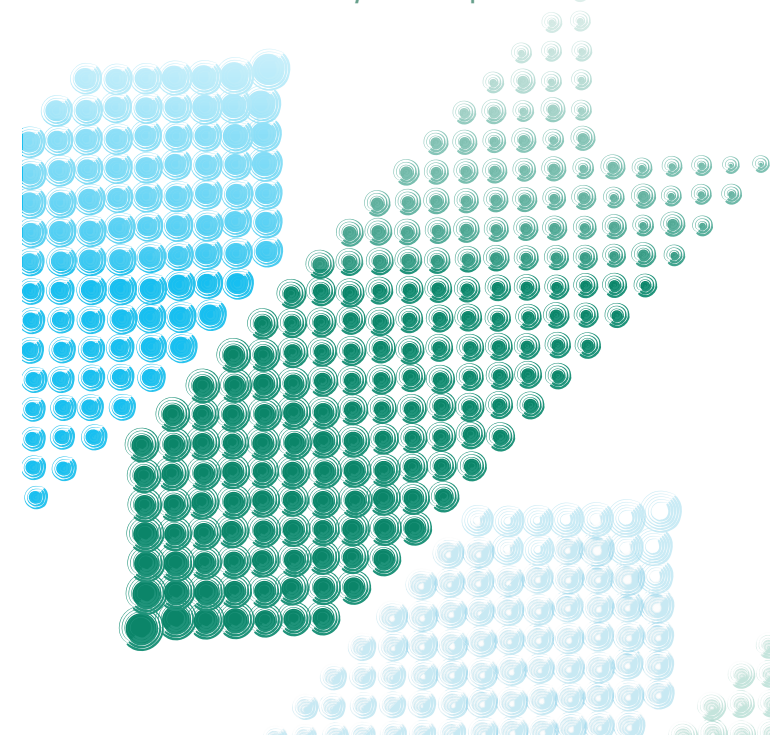
This Workshop has been organized thanks to the unconditional support of Hemanext™



Workshop

ANAEROBIC STORAGE OF RED BLOOD CELLS FOR TRANSFUSION

a new perspective for better clinical outcome in chronically
and acutely transfused patients



Rome, 8 November 2017

Hotel Cicerone
Via Cicerone, 55/c

PROGRAM

10.30 - 11.00 Welcome coffee

Chairpersons: *G.M. Liembruno, G. Grazzini*

11.00 - 11.10 Opening address

G.M. Liembruno

11.10 - 11.30 Overview on the epidemiology of thalassemia and other congenital haemoglobinopathies

G. Forni

11.30 - 12.10

Red blood cell storage lesion and transfusion outcomes: state of the art and new research perspectives

M. Prudent

12.10 - 12.30

Red blood cell transfusion for thalassemia: the haematologist's expectations for optimal patient outcome

V. Pinto

12.30 - 13.00

Unexpectedly wide distribution of oxygen in stored RBCs and opportunity to enhance their uniformity and overall quality for transfusion with anaerobic storage

T. Yoshida

13.00 - 13.30 Discussion

13.30 - 14.30

Lunch

14.30 - 15.00

Hemanext: a new perspective to enhance the therapeutic value of donated blood and improve patient outcome

A. Dunham

15.00 - 15.30

State of the art of the development and commercialization of *Hemanext*

M. Cannon - T. Pare

15.30 - 15.50

Discussion

15.50 - 16.00

Closing remarks and take-home messages

G. M. Liembruno - G. Grazzini



SPEAKERS

MARTIN CANNON

President and CEO, Hemanext™

ANDREW DUNHAM

**Vice President of Research and Clinical Affairs
Hemanext™**

GIANLUCA FORNI

**President of SITE (Italian Society of Thalassemia
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**Center for Thalassemia and Congenital
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MICHEL PRUDENT

**Head of Blood Products Research Laboratory,
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