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A new educational App helps support Graft-Versus-Host Disease Diagnosis and Scoring after Hematopoietic Cell Transplantation

Barcelona, Wednesday March 14, 2018 – A new e-Health educational App is now available to assist healthcare professionals in their assessment of graft-versus-host disease (GvHD), a potentially lethal complication of allogeneic stem cell transplantation. Its added value in the identification and accurate evaluation of this disease will be discussed during the 44th Annual Meeting of the European Society for Blood and Marrow Transplantation. The Meeting has registered more than 5,000 delegates for attendance in the host city of Lisbon, Portugal from March 18th to March 21st 2018.

Allogeneic Hematopoietic Cell Transplantation (HCT) is a curative and established treatment approach for patients with haematological malignancies such as leukaemia. However, graft-versus-host disease (GvHD), where the transplanted stem cells react against the tissues of the patient, is a major complication and often results in late morbidity and mortality, as well as in a reduction of quality of life. The accurate evaluation of this disease is thus of paramount importance to correctly evaluate and optimize transplantation outcome.

The transplantation community has made major efforts to develop international guidelines to diagnose and score GvHD accurately. However, it still remains a challenge to effectively implement the guidelines in daily clinical practice, as clinicians tend to consider them to be relatively complex and time consuming^{1,2}.

Dr Grzegorz Basak, Chair of the EBMT Transplantation Complications Working Party (TCWP) explains: “Our Working Party has been collaborating since 2014 with the University Hospitals Leuven (UZ Leuven) / KU Leuven (Academic Centre for Nursing and Midwifery) and the NIH to develop an electronic tool named ‘eGVHD App’, to help clinicians achieve optimal evaluation of GvHD. A rigorous user-centered design process has been followed: several rounds of feedback from experts and users have been included to improve usability and accuracy of the App.”

The ‘eGVHD App’ is available on:

- the AppStore - <https://itunes.apple.com/be/app/egvhd/id1355873791?mt=8>
- GooglePlay <https://play.google.com/store/apps/details?id=be.uzleuven.ghvd>
- online at <https://www.uzleuven.be/egvhd> (best to be used with a google chrome browser)

It is a user-friendly educational tool, which encourages the healthcare professional to work in a systematic fashion and evaluate all potentially affected organ systems according to up-to-date international guidelines. The app provides the user convenient details, such as definitions and pictures to illustrate the terms used, and segregates information according to the type of evaluation needed: whether aiming at research or daily practice GvHD assessment. Finally, the App gathers the information entered by the healthcare professional and produces the final score automatically, using an internal algorithm.

The use of the eGVHD app has already repeatedly been shown to improve the accuracy of the GvHD assessment of health care professionals^{2,3}. Right now, it is still limited to an educational function, but CE marking steps are underway, thanks to the support of the HTC Project Endowment Funds recently created by CRYOSTEM, to allow for certification for a broader clinical use.

Dr Helene Schoemans, HCT physician from the University Hospitals Leuven, Belgium explains: “The development of the eGVHD App is a fantastic experience. We have the chance to work with a team of highly motivated healthcare professionals and IT specialists across the world. We

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have translated their expertise and feedback in a computer algorithm using an interactive development strategy to ensure optimal usability and user adoption of the tool.” Dr Schoemans adds: “This has resulted in a rich interdisciplinary interaction and stimulating discussions. Ultimately, we hope that the eGVHD App will provide all healthcare professionals with what we could call a ‘portable GVHD expert’ to assist them in their clinical practice. It’s an exciting challenge!”

This project was supported by an educational grant: the ‘SOFHEA chair in stem cell transplantation’.

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About the European society for Blood and Marrow Transplantation (EBMT)

The EBMT is a not-for-profit medical and scientific organisation established in 1974. It is dedicated to fighting life-threatening blood cancers and diseases and improving patients’ lives. The EBMT Members - more than 4,000 physicians, nurses, scientists and other healthcare professionals - participate in a unique collaborative network of peers involved in haematopoietic stem cell transplantation (HSCT) and cellular therapy research. The membership encompasses at least 500 centres who are performing or are involved in HSCT in more than 50 countries. The EBMT holds a central role in performing co-operative studies and disseminating state-of-the-art knowledge aimed at increasing survival rates and enhancing the quality of life of patients with life-threatening blood cancers and diseases.

For further information about the EBMT, please visit the website: www.ebmt.org and follow us on Twitter: @TheEBMT

About UZ LEUVEN - University Hospitals Leuven

There are nearly 2,000 beds in the University Hospitals Leuven, making it the largest university hospital in Belgium. Every day, more than 9,000 enthusiastic employees do their utmost to provide diverse and specialist patient care and work continuously on improving and updating that care. The University Hospitals Leuven’s strength lies in combining top quality patient care, excellent innovative scientific research and high-standing academic training. It was also the first Belgian hospital to acquire the international JCI label for safe and quality care. For further information about UZ LEUVEN, please visit the website: www.uzleuven.be and follow us on Twitter: @UZLeuven

About KU Leuven – Katholieke Universiteit Leuven

KU Leuven is Europe’s most innovative university. Located in Belgium, it is dedicated to research, education, and service to society. KU Leuven is a founding member of the League of European Research Universities (LERU) and has a strong European and international orientation. Our scientists conduct basic and applied research in a comprehensive range of disciplines. University Hospitals Leuven, our network of research hospitals, provides high-quality healthcare and develops new therapeutic and diagnostic insights with an emphasis on translational research. The university welcomes more than 50,000 students from over 140 countries. The KU Leuven Doctoral Schools train approximately 4,500 PhD students.

For further information about UZ LEUVEN, please visit the website: www.kuleuven.be/english and follow us on Twitter: @KU_Leuven

About ACNM - Academic Centre for Nursing and Midwifery

The ACNM aspires to be a leading scientific centre that maximises the quality of nursing and midwifery care. The ACNM aims at higher educated nurses and midwives as key players in high quality and evidence based care. The ACNM considers professionalism, cooperation with other disciplines, care and policy organisations, training centres, patient organisations and professional and academic organisations to be crucial elements to achieve its mission. ACNM

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stands for respect for the individual, expertise, integrity, transparency and teamwork with all activities in line with this mission.

For further information about ACNM, please visit the website: [www. www.accenttv.be](http://www.accenttv.be) and follow us on Twitter: @accenttv

About the HTC Project Endowment Funds

Created in 2017 by CRYOSTEM, the HTC Project Endowment funds raises public awareness and collects funds to finance research programs on hematopoietic stem cell transplantation (HSCT) complications pursuing 3 main objectives:

- UNDERSTAND immune system mechanisms of each donor /recipient before and after bone marrow transplant and immunological conflicts involved in complications
- PREDICT the onset of different forms of complications to perfect their diagnosis and select the good candidates for transplant and the best donor/ recipient couples
- TREAT patients who are affected or at risk of being affected by these complications using drugs already marketed or under development in the framework of clinical trials

For further information on project submission and the HTC Project actions, please visit the website [www. www.htcproject.org](http://www.htcproject.org) and follow us on Facebook <https://www.facebook.com/HTC.Project>

About CRYOSTEM

Initiated in 2011 under the aegis of SFGM-TC (Francophone Society of Bone Marrow Transplantation and Cellular Therapy), CRYOSTEM is a national Cohort that brings together 33 of the 36 regional transplant units, 23 Biological Resource Centers and over 400 research and healthcare players involved in blood-related diseases. With more than 200,000 samples collected and processed from over 5000 patients and 2500 donors, CRYOSTEM has become the European benchmark for biobanking biological resources in the field of hematopoietic stem cell transplantation (HSCT) complications.

Since 2015, CRYOSTEM gives access to its collection through a call for projects program opened to all international academic and/or industrial research teams to better understand the biology of HSCT complications and meet the new challenges in contemporary immunology and cancer.

For further information on the CRYOSTEM 's collection and its condition of access, please visit the website <http://www.cryostem.org/en/>

Follow us on twitter @cryostem_FR and LinkedIn <https://www.linkedin.com/company/cryostem>

About SOFHEA

Sofhea vzw, stands for “Sociaal Fonds voor Hematologische Aandoeningen” or “Social Fund for Hematological Diseases”, a social charity fund aiming at supporting patients afflicted with hematological malignancies since 1986. Sofhea also supports research initiatives relating to stem cell therapies and personalized medicine. The ‘SOFHEA chair in stem cell transplantation’ was awarded to KU Leuven in 2013 to support research aiming at improving HCT outcome in a holistic manner.

For further information about SOFHEA, please visit the website: [www. www.sofhea.be](http://www.sofhea.be) and follow us on Twitter: @vzwsfhea

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2. Schoemans HM, Goris K, Van Durm R, Vanbrabant K, De Geest S, Maertens J *et al.* Accuracy and usability of the eGVHD app in assessing the severity of graft-versus-host disease at the 2017 EBMT annual congress. *Bone marrow transplantation* 2018. e-pub ahead of print 2018/01/14; doi: 10.1038/s41409-017-0017-0
3. Schoemans H, Goris K, Durm RV, Vanhoof J, Wolff D, Greinix H *et al.* Development, preliminary usability and accuracy testing of the EBMT 'eGVHD App' to support GvHD assessment according to NIH criteria-a proof of concept. *Bone marrow transplantation* 2016; **51**(8): 1062-1065. doi: 10.1038/bmt.2016.26

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