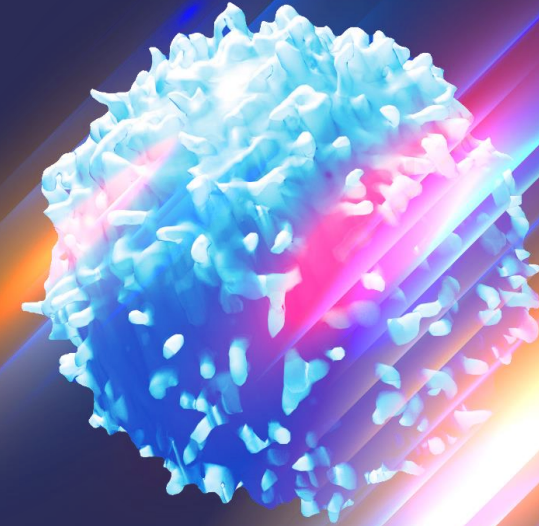


The role of ECP in the management of GvHD

November 29, 2022

Chair: Mohamad Mohty

Speakers: Hildegard Greinix, Daniel Wolff



Brought to you by  **Scientific Education Support**





Professor Daniel Wolff:
Looking to the future

Disclosures

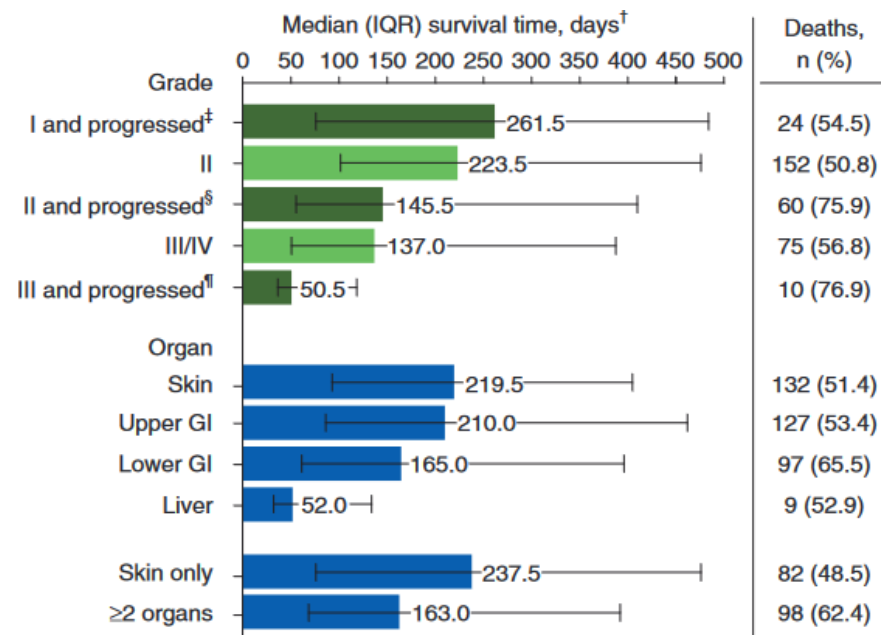
Daniel Wolff

- The following declarations are made for the last 3 years and the following 12 months (where arrangements have already been made):
 - Research grant(s)/in kind support: Novartis
 - Participation in accredited CME/CPD: Novartis, Mallinckrodt, Takeda, CSL Behring
 - Consultant/strategic advisor: Incyte, Sanofi
 - Patents/shares or stocks related or unrelated to this presentation: none
 - Non-financial interests to declare: none

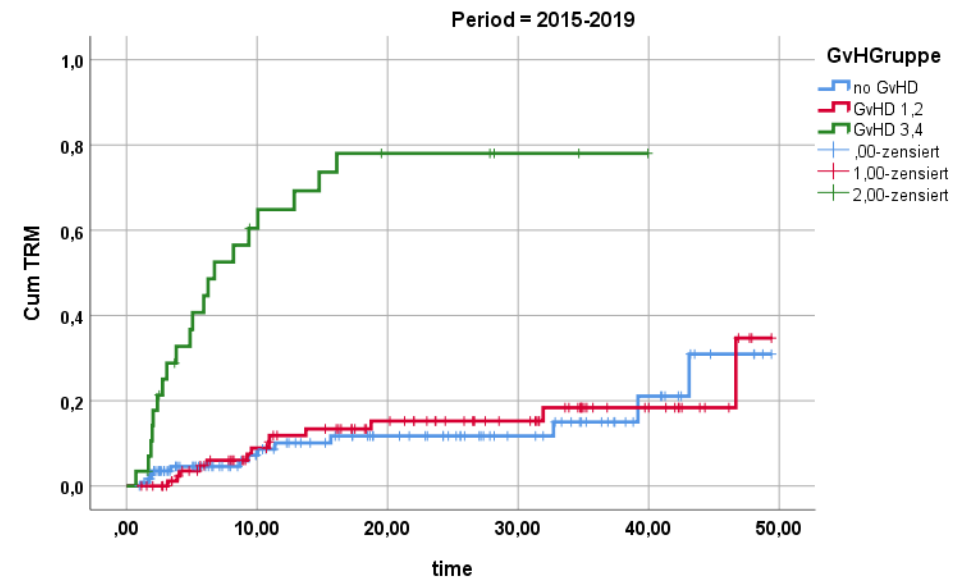
Current status in treatment of acute GvHD

- Acute GvHD > Grade 2 is associated with high long-term mortality

➤ Need for more effective treatment not adding to TRM in acute GvHD¹



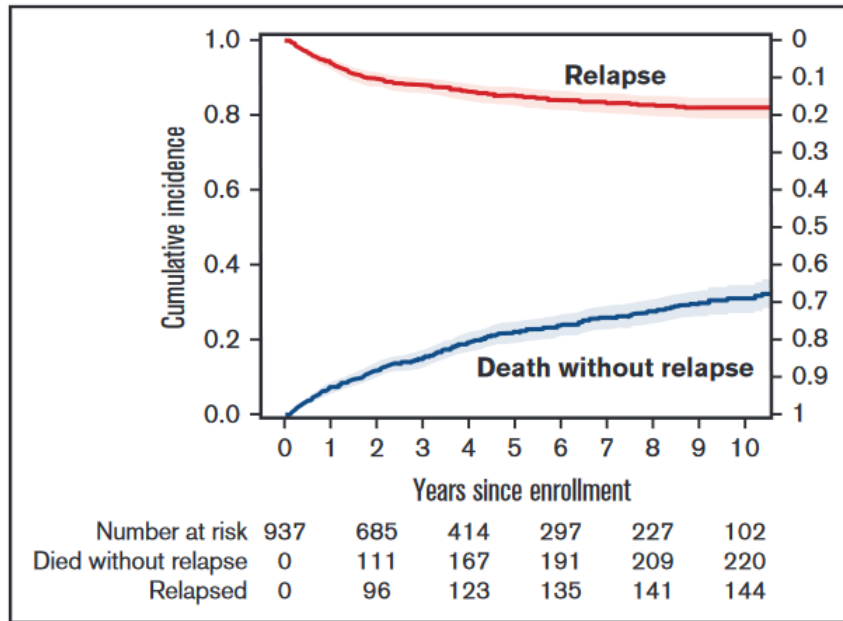
Jingbo Y, et al. *Biol Blood Marrow Transplant.* 2020;26(3):S181.



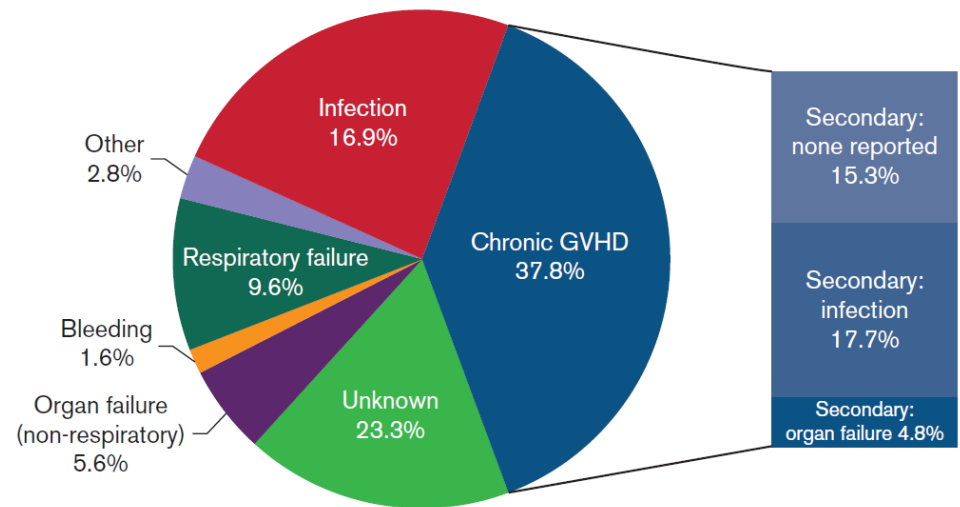
Holler E. 2019. Data on file. Unpublished

Current status in treatment of chronic GvHD

- TRM of chronic GvHD exceeds the relapse rate
- Need for less toxic and more effective treatment without impairment of GvL in chronic GvHD¹



DeFilipp Z, et al. *Blood Adv.* 2021;5(20):4278-4284.



DeFilipp Z, et al. *Blood Adv.* 2021;5(20):4278-4284.

Outlook for treatment of acute GvHD

- Risk-adapted first-line treatment (Minnesota high-risk + MAGIC high-risk): upfront ECP + steroids
 - MAGIC consortium (Principal Investigator: F. Ayuk): recruiting (NCT04291261)
- Second-line treatment in steroid-dependent aGvHD (and high risk for infectious complications or cytopenia)¹
 - While REACH2 indicated a better response rate for ruxolitinib, ECP was second best in terms of FFS*
 - Ruxolitinib may be contraindicated in some patients²⁻⁶
- Third-line treatment in patients failing ruxolitinib
 - ECP in combination with ruxolitinib⁷
 - ECP as add-on to other immunosuppressive approaches (ATG, MSC)⁸
- Search for biomarker predicting response to ECP
 - NIH study on biomarker of response in added ECP (NCT02322190)

ATG, antithymocyte globulin; ECP, extracorporeal photopheresis; FFS, failure-free survival; GvHD, graft-versus-host disease; MAGIC, Mount Sinai Acute GVHD International Consortium; MSC, mesenchymal stem cells; NIH, National Institute of Health. *Unpublished data.

1. Zeiser R, et al. *N Engl J Med* 2020; 382:1800-1810. 2. Zeiser R, et al. *N Engl J Med*. 2021;385(3):228-238. 3. Greinix H, et al. *Blood*. 2000;96(7):2426-2431. 4. Jagasia M, et al. *Biol Blood Marrow Transplant*. 2013;19(7):1129-1133. 5. Martin PJ. *Blood*. 2020;135(19):1630-1638. 6. Das-Gupta E, et al. *Haematologica*. 2014;99(11):1746-1752 7. Modemann F, et al. *Bone Marrow Transplant*. 2020;55(12):2286-2293. 8. Das-Gupta E, et al. *Bone Marrow Transplant*. 2014;49(10):1251-1258.

Outlook for treatment of chronic GvHD

- First-line treatment in combination with CS in patients with high risk for TRM (high-risk organs [lung, lower GI, liver], low platelets, progressive onset)
 - Trial start within the German-Austrian-Swiss consortium pending¹
- Second-line treatment in steroid-refractory/dependent chronic GvHD (and high risk for infectious complications or cytopenia—contraindication for ruxolitinib)
 - In the REACH3 trial, the ORR for ECP was the second highest response rate observed for all best available therapies assessed²
 - Higher efficacy compared to other BAT(not ruxolitinib)³
- Third-line treatment in patients failing ruxolitinib
 - Combination with ruxolitinib⁴
 - Replacement of ruxolitinib⁵⁻⁷

	ORR (CR+PR), % patients	ORR (CR+PR), no. patients
Everolimus	20.0	1/5
ECP	29.1	16/55
Ibrutinib	22.2	6/27
Imatinib	25.0	2/8
Infliximab	20.0	1/5
Low-dose MTX	30.0	3/10
MMF	28.6	10/35
Rituximab	16.7	1/6
Sirolimus	28.6	2/7

Zeiser R, et al. *N Engl J Med*. 2021;385(3):228-238.

BAT, best available therapy; CR, complete response; CS, corticosteroids; ECP, extracorporeal photopheresis; GI, gastrointestinal; GvHD, graft-versus-host disease; MMF, mycophenolate mofetil; MTX, methotrexate; ORR, overall response rate; PR, partial response; TRM, transplant-related mortality.

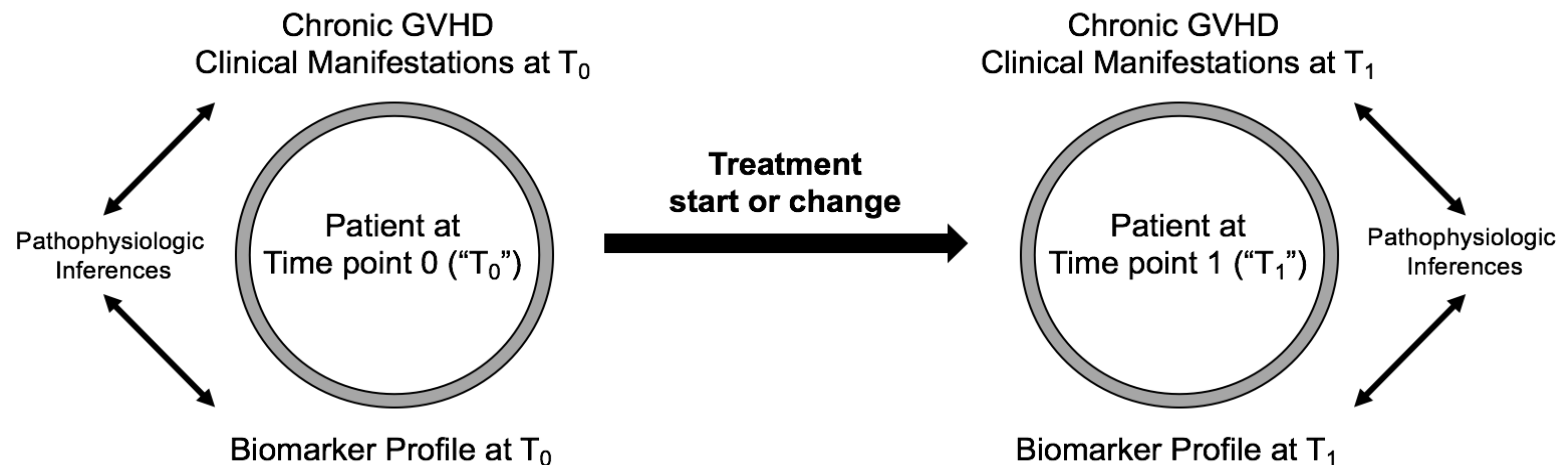
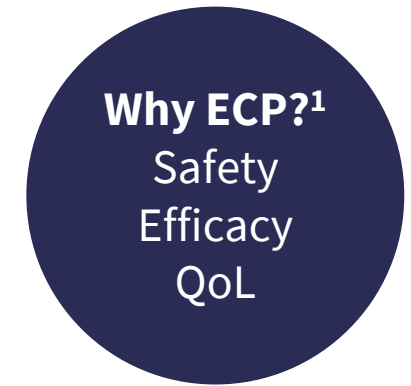
1. Greinix H et al. *Leukemia*. 2022 Nov;36(11):2558-2566 2. Zeiser R, et al. *N Engl J Med*. 2021;385(3):228-238. 3. Flowers MED, et al. *Blood*. 2008;112(7):2667-2674. 4. Maas-Bauer K, et al. *Bone Marrow Transplant*. 2021;56(4):909-916. 5. Greinix HT, et al. *Biol Blood Marrow Transplant*. 2011;17(12):1775-1782. 6. Nygaard M, et al. *Bone Marrow Transplant*. 2019;54:35-43. 7. Abu-Dalle I, et al. *Biol Blood Marrow Transplant*. 2014;20(11):1677-1686.

Outlook for the use of ECP

Need for patient tailored early and effective treatment

In first-line investigations:

- Patients should be recruited in the absence of active GvHD (Day 90)²
- Treatment start with GvHD onset (biopsy and plasma biomarker)
- Re-assessment after 8 weeks of treatment (T1) with follow up of 12 months³



Copyright © 2022 by Elsevier. Reproduced with permission. DeFilipp Z, et al. National Institutes of Health Consensus Development Project on Criteria for Clinical Trials in Chronic Graft-versus-Host Disease: III. The 2020 Treatment of Chronic GVHD Report. *Transplant Cell Ther.* 2021;27(9):729-737. DOI: [10.1016/j.jtct.2021.05.004](https://doi.org/10.1016/j.jtct.2021.05.004)

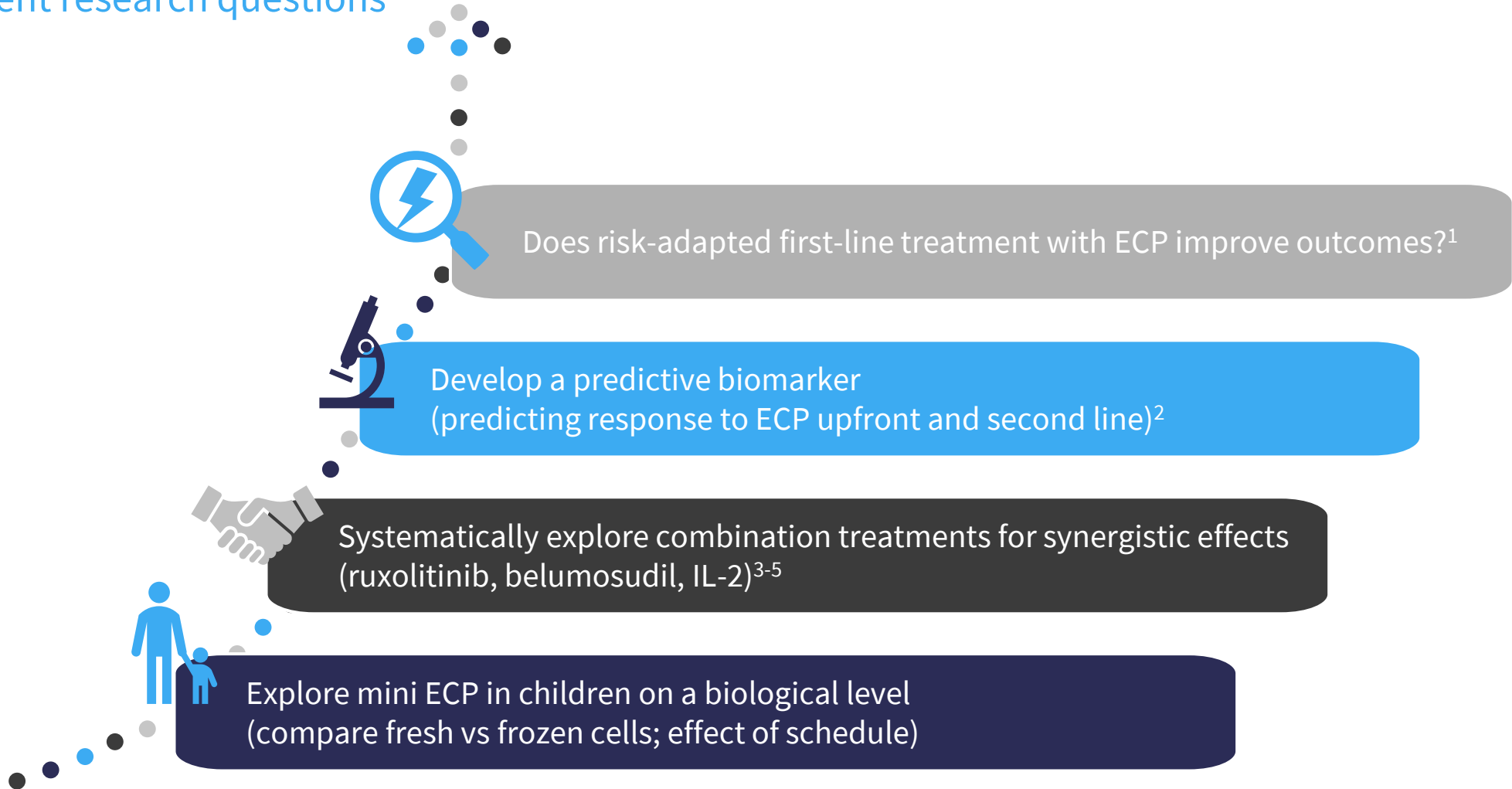
➤ Future studies could enable an analysis of the efficacy of ECP with a relatively low number of patients

ECP, extracorporeal photopheresis; GvHD, graft-versus-host disease; QoL, quality of life.

1. Jagasia M, et al. *Blood Adv.* 2019;3(14):2218-2229. 2. Zeiser R et al. *N Engl J Med* 2020; 382:1800-1810 3. DeFilipp Z, et al. *Transplant Cell Ther.* 2021 Sep;27(9):729-737.

Outlook for the use of ECP

Most urgent research questions



ECP, extracorporeal photopheresis; IL, interleukin.

1. NCT04291261. 2. NCT02322190. 3. Belizaire R, et al. *Blood Adv.* 2019;3(7):969-979. 4. Maas-Bauer K, et al. *Bone Marrow Transplant.* 2021;56(4):909-916. 5. Zeiser R, et al. *N Engl J Med.* 2021 Oct 21;385(17):1631-1632



Thank you