



Universität  
Basel

## Research Project

### Endothelial Progenitor Cells and Graft-versus-Host Disease

#### Third-party funded project

**Project title** Endothelial Progenitor Cells and Graft-versus-Host Disease

**Principal Investigator(s)** [Medinger, Michael](#) ;

**Organisation / Research unit**

Faculty of Medicine

Bereich Medizinische Fächer (Klinik)

Bereich Medizinische Fächer (Klinik) / Hämatologie (Passweg)

**Department**

**Project start** 01.01.2013

**Probable end** 31.03.2015

**Status** Completed

**Introduction**

Circulating endothelial progenitor cells (EPCs; CD31+CD34<sup>bright</sup>CD133+CD45<sup>dim</sup> cells) are novel markers of endothelial dysfunction and related to inflammatory processes such as acute graft-versus-host disease (aGvHD).

**Patients and Methods**

47 patients with acute myeloid leukaemia (AML) who were in complete remission as they underwent allogeneic hematopoietic stem cell transplantation with myeloablative conditioning with PBSC as stem cell source were enrolled in the study. Blood samples for the quantitative analysis of circulating EPC levels were drawn at different time points in patients with and without aGvHD. CD34+VEGFR2/KDR+CD133+ triple-positive cells identified among CD34+ cells by FACS. EPC were quantified and data are presented as cells/ml whole blood.

**Results**

Circulating EPC levels were not significantly different in patients with and without aGvHD prior to conditioning (baseline) and at the time of engraftment. However, at diagnosis of aGvHD  $\geq$  grade 2, EPC levels increased whereas in patients without aGvHD the EPC levels remained significantly lower (3021  $\pm$  278 versus 2322  $\pm$  195 cells/ml;  $p < 0.001$ ). Patients with steroid-refractory aGvHD had high levels of EPC throughout. EPC levels fell in responding patients.

**Conclusion**

Our results demonstrate that the number of circulating EPCs is increased in patients with aGvHD compared to patients without aGvHD.

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**Financed by**

University of Basel

### **Add publication**

#### **Published results**

3591630, Medinger, Michael; Heim, Dominik; Gerull, Sabine; Halter, Jörg; Krenger, Werner; Buser, Andreas; Lengerke, Claudia; Bucher, Christoph; Passweg, Jakob, Increase of endothelial progenitor cells in acute graft-versus-host disease after allogeneic haematopoietic stem cell transplantation for acute myeloid leukaemia, 0145-2126 ; 1873-5835, Leukemia Research, Publication: JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)

### **Add documents**

### **Specify cooperation partners**