



aGvHD

Extracorporeal photopheresis in steroid-refractory or steroid-dependent acute graft-versus-host disease

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Extracorporeal photopheresis (ECP), an immunomodulatory therapy, removes peripheral blood, then separates the buffy coat, and finally irradiates the cells before re-infusion. This technic is commonly used either in combination with infliximab or monotherapy as a second-line treatment for patients with acute graft-versus-host disease (aGvHD) who are dependent or refractory to steroids. A retrospective study on whether the addition of ECP could increase response rates and survival was published ahead of print in Bone Marrow Transplantation by [Marietta Nygaard](#) from [Rigshospitalet, University of Copenhagen](#), Denmark, and colleagues. The study group were assessing three different approaches on how to use of ECP efficiently in patients with aGvHD.

Data was collected from 38 patients treated with ECP between January 2014 and August 2017 at the Department of Hematology, Rigshospitalet, Denmark. Patients received 2 mg/kg prednisolone or methylprednisolone as first-line aGvHD therapy. If a patient was steroid-refractory (progression after 3 days or no improvement of aGvHD after 7 days), or steroid-dependent (inability to taper steroids without recurrence of aGvHD symptoms), they were treated with ECP.

Patients were divided into three categories:

- ECP-only group (n = 11; median age = 61 years [range, 47–74]): no infliximab was administered
- ECP-early group (n = 15; median age = 47 years [range, 31–70]): ECP was initiated less than 7 days after first dose of infliximab
- ECP-salvage group (n = 12; median age = 61 years [range, 38–68]): ECP was provided after more than 7 days of infliximab treatment

In ECP-salvage and ECP-early groups, infliximab was administered weekly or biweekly continuously until response was achieved.

Key findings:

- Median time to best response: 35 days (14–217)
- Overall response rate: 82%
 - ECP only: 9 patients achieved CR/VGPR, 2 non-responders
 - ECP early: 11 patients achieved CR/VGPR, 1 patient achieved partial response, 3 non-responders
 - ECP salvage: 8 patients achieved CR/VGPR, 2 patients achieved partial response, 2 non-responders
- Complete remission rate: 65%

- 6-month freedom from treatment failure: 45%
- 6-month overall survival: 62%
- Causes of death: infection (n = 10), aGvHD (n = 5), relapse of original malignant disease (n = 3), and other (n = 4)

In conclusion, the authors stated that ECP is an efficient treatment option for aGvHD, especially if it is given early in combination with infliximab. The key limitations of this study include its retrospective nature, the absence of a control group, and the small sample size. A prospective, controlled, and randomized study is warranted to confirm these findings.

Reference

1. Nygaard M. et al. Extracorporeal photopheresis is a valuable treatment option in steroid-refractory or steroid-dependent acute graft versus host disease-experience with three different approaches. Bone Marrow Transplant. 2018 Jun 15. DOI: [10.1038/s41409-018-0262-x](https://doi.org/10.1038/s41409-018-0262-x). [Epub ahead of print].

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