TITLE: Extracorporeal Photopheresis Following Bone Marrow Transplant: Clinical Effectiveness

DATE: 31 March 2014

RESEARCH QUESTION

What is the clinical effectiveness of extracorporeal photopheresis for the management of acute or chronic graft-versus-host disease in adults following bone marrow transplant?

KEY MESSAGE

Seven non-randomized studies were identified regarding the clinical effectiveness of extracorporeal photopheresis for the management of acute or chronic graft-versus-host disease in adults following bone marrow transplant.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library (2014, Issue 3), University of York Centre for Reviews and Dissemination (CRD) databases, ECRI (Health Devices Gold), Canadian and major international health technology agencies, as well as a focused Internet search. No methodological filters were applied to limit retrieval by publication type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2009 and March 18, 2014. Internet links were provided, where available.

The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.

RESULTS

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials and non-randomized studies.

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Seven non-randomized studies were identified regarding the clinical effectiveness of extracorporeal photopheresis for the management of acute or chronic graft-versus-host disease in adults following bone marrow transplant. No relevant health technology assessments, systematic reviews, meta-analyses, or randomized controlled trials were identified. Additional references of potential interest are provided in the appendix.

OVERALL SUMMARY OF FINDINGS

Seven non-randomized studies\(^1-7\) were identified regarding the clinical effectiveness of extracorporeal photopheresis for the management of acute or chronic graft-versus-host disease in adults following bone marrow transplant. This therapy was generally associated with improved clinical response rates and a reduction in immunosuppression in this population. Details of the included studies are provided in Table 1.
Table 1: Summary of Included Studies

<table>
<thead>
<tr>
<th>Author, Year, Study Type, Treatment</th>
<th>ECP Indication</th>
<th>Results</th>
<th>Conclusions</th>
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| (2013)⁴ NRS ECP for 90 days        | aGVHD          | • Average aGVHD score and dose of immunosuppressive medications decreased  
                                |                | • Complete response in skin or liver and gastrointestinal involvement was seen in 6/9 and 8/9 patients, respectively  
                                |                | • All patients developed cGVHD  | concluded that ECP successfully managed grade II to grade III aGVHD but did not preclude the development of cGVHD. |
| Ussowicz et al. (2013)⁵ NRS ECP regimen not specified | Steroid-refractory aGVHD and cGVHD | Of cGVHD patients:  
                                |                | • Most either discontinued steroid therapy or received a markedly reduced dose  
                                |                | • More than half achieved 4-year survival  
                                |                | Of aGVHD patients:  
                                |                | • One third had a CR or PR  
                                |                | • There was no change in overall survival or steroid dose  | The authors concluded that ECP lead to a significant decrease in steroid use and improvement in response rates in cGVHD but not aGVHD patients. |
| Dignan et al. (2012)⁶ NRS Bimonthly ECP | Steroid-refractory/dependent/intolerant, mucocutaneous cGVHD | Of patients who completed 6 months of ECP:  
                                |                | • Symptoms improved by at least 50% for almost all patients  
                                |                | • Immunosuppression and steroid dose decreased  
                                |                | • Survival at 3 years post-treatment was 69%  | The authors concluded that bimonthly ECP for cGVHD effectively decreased doses of immunosuppressive therapy. |
| Greinix et al. (2011)⁷ NRS (open-label crossover study) 24 weeks of ECP | Steroid-refractory/dependent/intolerant cGVHD | After 24 weeks of ECP:  
                                |                | • 31% of patients demonstrated a CR or PR for skin symptoms  
                                |                | • Steroid dose was reduced by at least 50% in 33% of patients  | The authors concluded that ECP effectively managed cGVHD in patients who had previously received standard treatment without benefit. |

aGVHD = acute graft-versus-host disease; cGVHD = chronic graft-versus-host disease; CR = complete response; ECP = extracorporeal photopheresis; NRS = non-randomized study; PR = partial response
REFERENCES SUMMARIZED

Health Technology Assessments
No literature identified.

Systematic Reviews and Meta-analyses
No literature identified.

Randomized Controlled Trials
No literature identified.

Non-Randomized Studies


APPENDIX – FURTHER INFORMATION:

Non-Randomized Studies

Prevention


Bone Marrow Transplant Unclear


National Institutes of Health Classification of Graft-Versus-Host Disease


Guidelines and Recommendations

Review Articles


