
Students' Corner

Letter to the Editor

Extracorporeal photopheresis for graft versus host disease: A hope

Madam, Extracorporeal photopheresis (ECP) is an emerging modality in the treatment of graft versus host disease (GvHD) which complicates many haematopoietic stem cell transplants. Systemic corticosteroids and other immunosuppressive agents currently used to treat GvHD have unsatisfactory responses and high mortality, signifying the need of a novel therapy.¹

ECP is a 3-4 hours long outpatient procedure. Mononuclear cells (<5%) are separated from blood by apheresis. 8-methoxypsoralen is added to them and activated by UVA (320-400nm). It binds to DNA, proteins and lipids within the cell. The cells are then returned to the patient. In 24 to 72 hours, lymphocytes undergo apoptosis. ECP also promotes differentiation of monocytes into antigen presenting dendritic cells which engulf the apoptotic lymphocytes, present tumour antigens and cause proliferation of cytotoxic T cells and NK cells against the tumour. Cytokines released by these dendritic cells contribute to the production of regulatory T cells which induce immune tolerance between recipient and donor stem cells by controlling circulating self reactive cells, without affecting graft versus tumour effect.²

ECP lowers the rates of infection by reducing the duration of immunosuppressive therapy, lowers relapse rates by not inhibiting graft versus tumour effect and decreases the risk of secondary malignancies associated with conventional therapies. It also improves erythroid recovery and reduces RBC transfusion requirements.³ Hypotension during apheresis, mild pyrexia after reinfusion of cells, and lethargy for 1-2 days after each cycle are occasionally seen. So far no long-term side effects or fatal toxicities have been reported. However, ECP is expensive and needs special equipment.

Reported trials on ECP are limited to second line setting but show encouraging results. In acute GvHD, a Phase II trial reported complete resolution in 82% patients with skin manifestations and 61% patients with liver or GI manifestations with second line ECP.⁴ In steroid refractory cGvHD, the addition of ECP to conventional immunosuppressants showed overall response rate of >50% and also a steroid sparing effect in many studies.^{1,2,5} The role of ECP in GvHD prophylaxis is yet to be established as studies have shown contrasting results.¹ While further randomized controlled trials on ECP are in progress in the West, there is also a need to evaluate the effectiveness of this modality in our part of the world. ECP may be a potential ray of hope for those refractory to existing therapeutic agents.

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