Sir,

Sustained-release ganciclovir implant as prophylaxis for cytomegalovirus retinitis in a child undergoing bone marrow transplantation

Cytomegalovirus (CMV) retinitis is a sight-threatening opportunistic infection. We discuss the challenges in its management in a child with acute lymphoblastic leukaemia (ALL) and its subsequent prophylaxis against relapse during bone marrow transplantation (BMT).

Case report

A 15-year-old girl with relapsed ALL developed zone 1 CMV retinitis in the left eye post chemotherapy (Figure 1a). Vision was 20/20 OD 20/200 OS. Investigations revealed pancytopenia and CMV-DNA level of 78 000 copies/ml plasma.

The retinitis worsened despite intravenous foscarnet, and biweekly intravitreal foscarnet (2.4 mg/0.1 ml) was added (Figure 1b). Aqueous tap was positive for CMV-DNA. Plasma CMV levels became undetectable within 2 weeks, but the retinitis persisted and the right eye also became involved (Figure 1c). Quiescence with undetectable aqueous CMV-DNA was finally achieved after repeated injections (nine left, five right) (Figure 1d).

With this, the patient underwent ganciclovir implant (Vitrasert, Bausch and Lomb, Rochester, NY, USA) insertion in the left eye, and proceeded for BMT under intravenous foscarnet cover. This eye remained well, but the right eye relapsed on day 14 and progressed despite

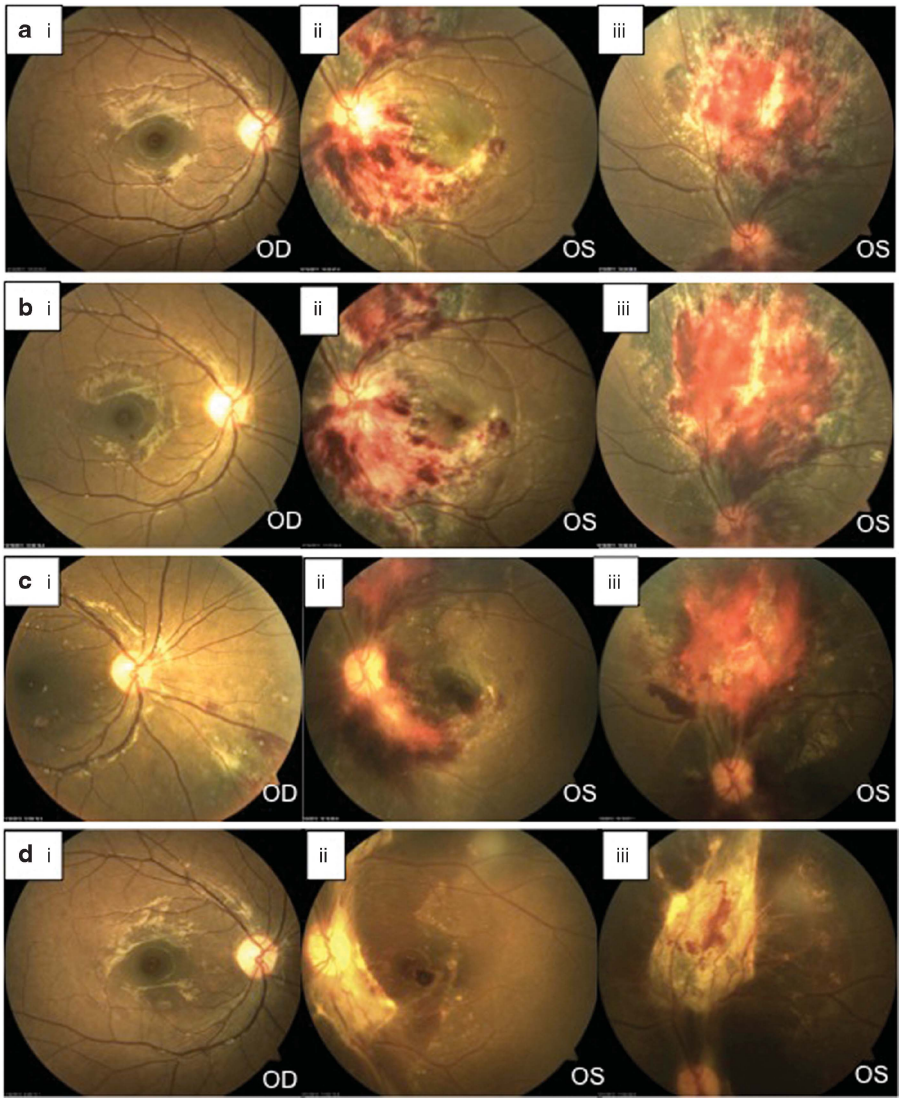

Figure 1 (a) Fundus appearance on presentation, showing an extensive area of haemorrhagic retinitis inferior to and involving the optic disc associated with gross macula oedema in the left eye (ii), and a second area superiorly (iii), consistent with CMV retinitis. (b) Fundus appearance after 5 days of systemic forscarnet therapy, with worsening of retinitis. (c) After 2 weeks, showing partial resolution of disease in the left eye (ii, iii) with combined systemic and intravitreal treatment, but new lesions in the right eye, both in the macula and inferonasal retina (i). (d) Fundus appearance at 5 weeks after bilateral intravitreal therapy, showing inactive disease with extensive scarring in the left eye.

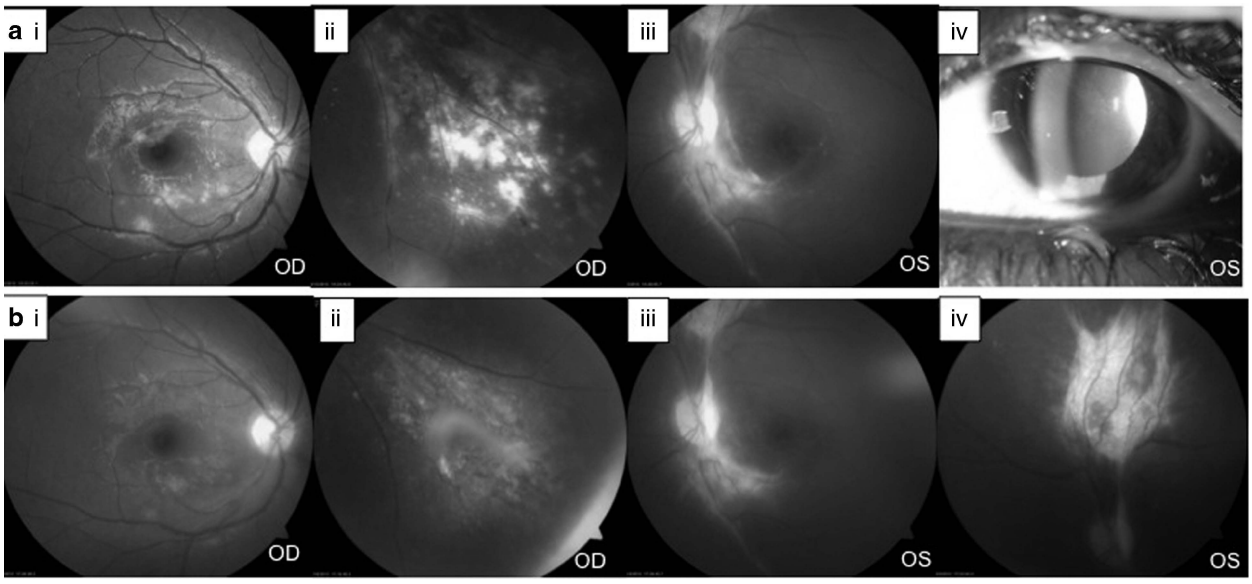

Figure 2 (a) Fundus appearance of the right eye showing recurrence in the macula (i) and inferonasal retina (ii). The left eye remained quiescent (iii), with ganciclovir implant *in situ* (iv). (b) Fundus appearance 12 months after bone marrow transplant, with no sign of recurrence and scarring only, left eye (iii, iv) more than right (i, ii).

undetectable plasma CMV-DNA levels throughout (Figure 2a). A ganciclovir implant was then placed in this eye, which resulted in disease resolution. There was no further recurrence, and systemic anti-CMV treatment weaned off with immune reconstitution following successful BMT. Vision was 20/20 OD 20/60 OS at 12 months (Figure 2b).

Comment

Our patient responded poorly to systemic treatment, requiring adjuvant intraocular injections for control. CMV prophylaxis during subsequent BMT was problematic. Recurrence was likely even under systemic anti-CMV cover, with accompanying risks of bone marrow or renal toxicity. The need for repeated intravitreal injections under sedation was anticipated.

We elected to implant a sustained-release ganciclovir device in the worse eye only after considering the relative risks of complications, for example, retinal detachment in a quiescent eye.[1] The other eye, however, relapsed and required an implant secondarily. Although CMV viraemia is used to monitor the risk of retinitis post-BMT,[2] plasma levels were not reliable in predicting relapse in our case, highlighting the need for regular surveillance.

Ganciclovir implants appeared well-tolerated and effective in preventing and treating relapse in our patient. Although described in the treatment of CMV retinitis post-BMT,[3,4] its prophylactic use in a quiescent eye has not been reported previously.

Conflict of interest

The authors declare no conflict of interest.

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