CORRESPONDENCE

$\gamma\delta$ T cells in aqueous humour from untreated idiopathic uveitis patients

EDITOR,—It is now well established that many lymphocytes are present in the anterior chamber secondary to a blood-ocular barrier breakdown, that most of them are of the T cell lineage,¹ and that in some instances they are activated, as shown by the expression of membrane bound high affinity interleukin 2 receptors.² To the best of our knowledge, however, no studies have determined whether cells bearing the $\gamma\delta$ T cell receptor heterodimer populate the anterior intraocular fluid in both normal and pathological conditions. By using an immunofluorescence staining technique and two direct enumerating monoclonal antibodies (mAbs) [a phycoerythrin conjugated anti-CD3 mAb (T3RD1; Coulter Immunology, Hialeah, FL) and a fluorescein conjugated panreactive $\gamma\delta$ T cell reagent (anti-TCR δ 1; T Cell Sciences, Cambridge, MA)] we carried out two colour cytofluorimetric analysis (FACScan, Becton Dickinson, Mountain View, CA) to evaluate the percentage of $\gamma\delta$ T lymphocytes in the aqueous humour in 10 untreated adult patients with idiopathic anterior uveitis and in eight patients with idiopathic panuveitis. Ocular diagnoses were made on the basis of history, clinical examinations, and results of routine laboratory tests. The diagnosis was confirmed by no clinical evidence of uveitis syndromes, systemic diseases, or concomitant laboratory abnormalities. Aqueous samples for $\gamma\delta$ T cell quantitation were obtained by aqueous paracentesis using a plastic tuberculin syringe and a 27 gauge needle. The percentage of circulating $\gamma\delta$ T lymphocytes calculated after density gradient centrifugation of heparinised venous blood from 12 of our patients, as well as from 10 healthy control subjects was assessed in parallel and used for comparison in statistical analyses. Despite similar proportions of CD3⁺ lymphocytes (data not shown), the number of cells bearing the $\gamma\delta$ T cell receptor for antigen (CD3⁺/TCR δ 1⁺) was significantly higher in aqueous humour than in either the autologous or heterologous bloodstream (Table 1). Although the biological significance of $\gamma\delta$ T cells in ocular fluids during the clinical course of idiopathic uveitis remains unclear, increased levels in the blood of

Table 1 $\gamma\delta$ T cell concentrations (CD3⁺/TCR δ 1⁺) in aqueous humour (AH) from 18 untreated adult patients with idiopathic uveitis (IU), 10 with anterior (A) and eight with panuveitis (P). Peripheral blood samples from 12 uveitis patients (six with LAU and six with IPU) (autologous blood=AB) and 10 healthy controls (heterologous blood=HB) were assayed in parallel and used for comparison in statistical analyses

	CD3 ⁺ /TCR δ 1 ⁺ cells*
AH-IAU	10.6 (4.0)†
AB	3.5 (0.5)
AH-IPU	11.4 (3.6)†
AB	4.4 (2.9)
HB	4.2 (1.9)

*Relative percentages expressed as mean (SEM). Data obtained by direct immunofluorescence followed by two colour cytofluorimetry. †p<0.05 by one way Kruskal-Wallis analysis of variance with respect to both AB and HB.

subjects with some infectious diseases³ and autoimmune disorders,⁴ as well as in the vitreous from a patient with acute sympathetic ophthalmitis⁵ suggest these cells may be involved in immune surveillance and/or autoreactivity. In general, patients with uveitis are treated with local or systemic steroid therapy. We have recently demonstrated that the $\gamma\delta$ T lymphocytes are strongly susceptible to apoptosis induced by glucocorticoids.⁶ If intraocular $\gamma\delta$ T cells play a role in the pathogenesis of idiopathic uveitis, then apoptotic signals may be one of the mechanisms by which these drugs lead to partial or complete remission of the symptoms. Supporting this hypothesis are occasional observations in three patients with ocular complications of toxoplasmosis (two cases) and syphilis (one case) showing that $\gamma\delta$ T lymphocytes were virtually absent in their ocular fluids.

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History of ophthalmology

EDITOR,—I have for some time now been very much enjoying the series 'History of ophthalmology' which appears in your journal, written by the estimable Fiona Roman.

While not going so far as to say that it is the best thing in your columns, it certainly comes close to this and I am constantly amazed and diverted by the extraordinary pieces of information Ms Roman manages to dig up and provide to your readers.

Is it possible for us to know a little more about Ms Roman and her activities? Is she a historian or an ophthalmologist (or both) and may we at some point hope to see some of her articles in a more permanent form such as a book?

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Reply

EDITOR,—I thank John P Lee for his comments. I myself am fascinated by the detailed reports which can be found on all aspects of medical history, particularly where they give a hint of the personalities and attitudes behind them.

Manuscripts often describe completely outlandish procedures which the writer obviously finds quite matter of fact, and appears to firmly believe in. The strangeness of some of the accounts, such as having one's hands severed for operative failure in Babylonia, sometimes makes the gap between these early physicians and ourselves incomprehensible. And then, a few lines later the writer moans about patient compliance or decries his colleagues' treatments in terms we might use today, and suddenly he sounds just like us!

My specialty is not, in fact, ophthalmology, but I would describe myself as a medical writer in the context of these articles. I am a historian only in the sense that it offers scope for my writing. I hope this answers the query and that readers continue to enjoy the articles.

DR FIONA ROMAN
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Chronic lymphatic leukaemia in the elderly

EDITOR,—We recently encountered an 82-year-old woman with stage one chronic lymphatic leukaemia (CLL) who presented 3 days after uncomplicated cataract surgery with endophthalmitis. *Streptococcus pneumoniae* was cultured from the aqueous.

These patients are susceptible to bacterial infections and pneumococcal infection is known to be a particular problem.¹ CLL is the most common leukaemia of the elderly which means patients are likely to present for cataract surgery. We believe consideration should be given to anti-pneumococcal antibiotic prophylaxis in view of the poor prognosis attached to endophthalmitis with such a virulent organism. Subconjunctival vancomycin before surgery would be a suitable choice as it will achieve therapeutic aqueous levels and is active against the pneumococcus.²

We believe that in patients who have had endophthalmitis in the first eye or who have hypogammaglobulinaemia (IgG <50% of the lower limit of normal) additional measures need to be taken for the second eye. Consultation with an immunologist may be helpful as these patients can benefit from intravenous immunoglobulin. This has been shown to decrease the likelihood of infection in at risk patients.³

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Xerophthalmia in Rwandan refugees

EDITOR,—In July 1994 the influx of Rwandan refugees into the Ngara district of Tanzania increased drastically. The newcomers were in worse general condition than previous waves of refugees. During the same period a case of