Epstein-Barr Virus Anterior Uveitis in a paediatric kidney transplant recipient

Colin Higgins[1], Harry Petrushkin[1,2], Ameenat L Solebo[1,3,4], William Moore[1], Sheila Boyle[1], Zainab Arslan[1], Jelena Stojanovic[1], Judith Breuer[1,3], Stephen D Marks[1,3]

1. Great Ormond Street Hospital for Children NHS Foundation Trust, London, United Kingdom
2. Moorfields Eye Hospital NHS Foundation Trust, London, United Kingdom
3. NIHR GOSH Biomedical Research Centre, University College London Great Ormond Street Institute of Child Health, London, United Kingdom
4. Population, Policy and Practice Department, University College London Great Ormond Street Institute of Child Health, London, United Kingdom

Introduction

Epstein-Barr Virus (EBV) poses significant risks to immunosuppressed patients following kidney transplant, including post-transplant lymphoproliferative disorder (PTLD). This can be associated with renal allograft loss and increased mortality.[1] EBV is a potential, but uncommon, cause of virus induced anterior uveitis (AU) in immunosuppressed patients. Definitive diagnosis of EBV in the eye can be made by aqueous or vitreous humour PCR analysis.[2]

Methods

A 7 year old girl with end stage kidney disease, secondary to bilateral renal dysplasia, underwent a pre-emptive living maternal donor kidney transplant (mismatch 0,1,1, EBV D+/R-, CMV D+/R-). The immediate post-transplant period was complicated by EBV and BK viraemia. One year post-transplant, evidence of worsening EBV viraemia (blood PCR DNA >1.8million IU/ml and generalised lymphadenopathy) was treated with intravenous rituximab. There was a temporary improvement in EBV levels followed by persistent EBV viraemia. Three years post-transplant the patient developed red, photophobic eyes with no history of trauma.

Results

Ophthalmological examination under anaesthesia (EUA) confirmed bilateral granulomatous uveitis with mixed anterior chamber hypopyon and hyphaema, vitritis and absence of retinitis. An anterior chamber fluid sample revealed positive EBV, Cycle Threshold (CT) value 26.7 and negative HSV, VZV and CMV, indicating a probable diagnosis of EBV AU. Blood EBV PCR DNA was >1.8 million IU/ml. Following treatment with bilateral orbital floor injections of triamcinolone, significant improvement in intraocular inflammation was observed. Treatment with topical corticosteroid drops was continued in addition to oral prednisolone and tacrolimus. Six months post triamcinolone injections, the patient had persistent EBV viraemia (blood PCR DNA >1.8million IU/ml) and chronic AU. A further course of rituximab resulted in improvement in EBV viraemia (blood PCR DNA reduced to 33,600 increasing again to 300,478 IU/ml) and reduction in degree of intraocular inflammation. She underwent subsequent EUA with left lensectomy, anterior vitrectomy and intravitreal dexamethasone implant injection with eye samples sent for aqueous viral PCR, lens matter viral PCR and histopathology. Histopathology showed occasional scattered acellular lens matter. Molecular analysis revealed significant EBV presence with CT value 30.28.

Conclusion

This case describes the first report of probable EBV AU in a paediatric kidney transplant recipient. It highlights additional complications posed by post-transplant EBV viraemia and the complexities in the balance of immunosuppression and risks of viraemia while maintaining renal allograft function. The long term prognosis of EBV AU in this paediatric cohort remains unclear due to limited reports in literature. Close monitoring and early intervention are required to limit long term effects on vision.

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References

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