Aim Haemophagocytic lymphohistiocytosis (HLH) is a rare, life-threatening disorder. It can present to many specialities and individual Paediatricians are unlikely to develop significant experience of it. Early recognition and treatment improves the clinical outcome. The genetic basis of HLH is evolving and identification of viral triggers influencing management.

We aimed to study cases of HLH presenting to our tertiary Paediatric Hospital to identify the proportion of de novo cases and evaluate the role of Ebstein Barr virus (EBV) and genetic defects in the pathogenesis of HLH.

Methods Immunology, Rheumatology and Haematology Consultants identified children diagnosed with HLH over a 10 year period from 2003–2013. ICD10 codes were cross referenced. Case notes and electronic data were interrogated to extract relevant data.

Results 20 children were diagnosed with HLH over the 10 year period. Seven patients were de novo diagnoses and 13 had known haematological malignancy or rheumatological conditions.

At presentation, 15% met the HLH 2004 diagnostic criteria, rising to 45% at time of diagnosis (Figure 1).

Viral triggers were investigated by EBV PCR and/or throat swab in 50% of patients and all de novo HLH patients were EBV positive. Of those found to be EBV positive, Rituximab was given to 4 patients. Genetic mutations were looked for in 40% of all patients (Figure 2).

Nine patients recovered with standard management, 6 died and 5 proceeded to bone marrow transplant.

Conclusions HLH can present to a variety of paediatric specialities and a high index of suspicion is needed to make a timely diagnosis, as not all patients have ‘classical’ features at presentation. Identification of EBV gives the opportunity to use Rituximab effectively. In children with unusual responses to ubiquitous viruses, such as EBV, the competency of the host should be questioned. Some genetic defects predisposing to HLH in whom long term management with stem cell transplant can be curative are already known, and further defects may be discovered in the future. Accurate genetic diagnosis not only influences management, but is important for the families affected.
Determining the Health Needs of Children with Special Educational Needs

Aim (1) To identify tumour specific MHC class I phosphopeptide antigens on lymphoblastoid cell lines LCL’s (an in vitro model for PTLD) as well as hepatic tumour tissues. (2) T-cells are immune cells which are notoriously difficult to maintain in long-term culture and as a result it is difficult to establish an ‘off the shelf’ T-cell product, however the aim of this project was to explore potential modalities for capturing the T-cell receptor (TCR), important in recognising tumour specific antigens and the resultant product could be used to establish a non patient-specific, but tumour specific product.

Patients and methods Paediatric and adult patients were identified with hepatic malignancy and consented as per current policy. Cells were isolated and tumour specific phosphopeptide antigens were identified. These provide the targets for T-cells, and more specifically TCR’s. Having identified these antigens, modalities have been explored for expanding these cells. Hybridoma technology is long established in immortalising B-cells, and this study aims to explore its potential with immortalisation of T-cells.

Results A number of novel phosphopeptide antigens have been identified both in vitro as well as on patient tissues. This information has been used to identify potential T-cell targets and by formation of hybridomas we have established a method for expanding specific T-cell’s in vitro. Although these hybridomas are currently unstable due to their tetraploid status, we aim to modify this protocol further to allow for stable expansion of hybridoma cells which possess the relevant TCR motif.

Conclusions Identifying a modality for expanding cells with a specific TCR repertoire clearly allows us to target tumour specific phosphopeptide antigens and has the potential to be developed as an immunomodulatory therapy in patients with hepatic tumours or PTLD.

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TIME TO DISCUSS PREVENTION STRATEGIES FOR GROUP B STREPTOCOCCUS DISEASE

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Aims Group B Streptococcus (GBS) can cause neonatal sepsicaemia, meningitis and rarely, infective endocarditis. Through this case study, we aim to raise awareness of the devastating sequelae of GBS disease and the importance of early recognition of complications.

Case discussion: A term infant born in good condition was being managed by the community midwifery team for feeding difficulties, failing to thrive and presented to A&E twice with lethargy and maternal concern. At two weeks of age he represented having additionally developed fever and was admitted and treated for GBS sepsicaemia and meningitis. He was discharged after 5 days to ambulatory care for continuation of antibiotics. 10 days into treatment his mother became worried and he presented to A&E in cardiogenic shock with a heart murmur, enlarged liver and rising lactate.

Once transferred to the Paediatric Intensive Care Unit, he required ventilation and inotropic support for poor cardiac output, and conservative medical treatment for necrotising enterocolitis, presumed secondary to embolic pathology. An echocardiogram demonstrated two large, mobile masses attached to the mitral valve leaflets with severe mitral regurgitation and right ventricular dysfunction, consistent with infective endocarditis in an otherwise structurally normal heart (Figure 1). Surgical repair of his valve was not possible and so a 17mm prosthetic St Jude’s Valve was placed in the mitral position. Post-operatively he developed a low cardiac output state, seizures, and