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Hyperferritinaemia and EBV viraemia are poor predictors of HLH post allogeneic stem cell transplantation.

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Abstract Content: With increasing recognition of the phenomenon of Haemophagocytic Lymphangiohistiocytosis (HLH) and uncertainty around the role of Epstein Barr Virus infection within this scenario we performed a retrospective analysis of all patients within our institution, a large teaching hospital and bone marrow transplantation centre covering a population c. 2 million, who were found to have both a serum Ferritin > 1,000 ug/L and an Epstein Barr Virus (EBV) viraemia > 10,000 copies per ml over the calendar year of 2017. Information collected included underlying diagnosis, immunosuppressive therapy and HLH2004 criteria.

A total of 19 patients were identified, median age 58 years (Range 23-74), M=12 F=7. Underlying dia gnosis was a haematologic malignancy in 16, all of whom had received an allogeneic transplant and one each of alcoholic liver disease, renal transplant and metastatic breast cancer (untreated). These patients had a median Ferritin of 6082 ug/L (Range 1562-9994) and a median EBV viral load 38,000 copies per ml (Range 10,700 – 977,200).
11/19 patients were on ongoing immune suppressant therapy. Reviewing the HLH2004 criteria, 4 patients had fevers, 2 patients had splenomegaly, 2 or more cytopaenias were seen in 11, 2 patients had elevated triglycerides, no patients had low fibrinogen, 9 patients had a bone marrow biopsy performed with features of HLH seen in one. NK cell levels were not tested nor were soluble CD25 levels. A median of 2 HLH2004 criteria were met (range 1-4). Consideration of a diagnosis of HLH was documented in only three cases. 8 patients died 0-9 months following the peak viral load of EBV infection.

Diagnosing HLH following allogeneic SCT is not straight forward with many of the features of HLH attributable to other causes. In this case series we have used a serum Ferritin > 1,000 ug/L as a screening marker but this is a questionable practise as Ferritin is often elevated as an acute phase response protein for other reasons. The role of EBV viraemia in this setting also remains unclear but at the least is a marker of underlying immune suppression. One thing is clear though and that is that these patients have a poor prognosis with 8/19 (42%) surviving less than a year. Further work is urgently needed to refine predictive scores for HLH in this complex patient group and to identify novel diagnostic markers.

Disclosure of Interest: None Declared

Keywords: EBV, Ferritin, HLH, transplant