HyperIgM but not?

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ABSTRACT

Case Report: TK is currently a 16-year-old boy of Chinese descendant who first presented at the age of 6-years-old to a local state hospital with history of recurrent abdominal pain and chronic coughs for 6-months duration associated with reduced appetite. Extensive investigations at the time for pulmonary tuberculosis, lymphoma and leukemia, connective tissue disease as well as other infections such as retroviral and hepatitis B and C yielded negative results. At the age of about 6.5 years old, a T, B, and NK cell enumeration revealed low B cell (303 x 10^6/L) and low CD8 counts (259 x 10^6/L). Serum immunoglobulin levels showed elevated IgM of 4.7g/l. A CD40 ligand assay was done, which showed slightly reduced levels compared to control and a diagnosis of Hyper IgM syndrome was made. TK was started on 3 weekly intravenous immunoglobulins. Since the age of 11, TK started to have a change in bowel habits whereby he would pass loose stool (Bristol 5-6) 2 to 3 times per day as compared to once daily of soft stools. Physical examination revealed finger clubbing, and occasional crepitation bibasally with presence of enlarged liver of 13cm and spleen of 14 cm with shotty cervical lymph nodes. At the age of 12, molecular studies were done which revealed a missense mutation in the PIK3CD gene causing autosomal dominant pattern of activated phosphatidyl-inositol 3-kinase delta syndrome (APDS). Therapy with sirolimus (Rapamycin) was started after which TK's hepatosplenomegaly has improved and his began passing motion twice a day, Bristol 4-5. **Discussion:** Activated Phosphoinositide 3-kinase δ syndrome (APDS) is a recently recognised primary immunodeficiency disease. It is a type of combined immunodeficiency in which here is T-cell dysfunction as well as B-cell involvement that consequently leads to disease manifestation. APDS is caused by dominant mutations that increase activity of phosphoinositide-3-kinaseδ(Pi3kδ). Activating PI3Kδ mutations cause T cell senescence and lead to impaired B cell function and vaccine responses. Management of cases include anti-infective prophylaxis with Bactrim or Azithromycin, immunoglobulin replacement therapy, immunosuppression / modulation and HSCT for those with lymphomas or life-threatening infections.