Successful management of Pediatric-onset Multiple sclerosis with Ocrelizumab A CASE REPORT

INTRODUCTION

- Pediatric-onset multiple sclerosis (POMS) defined as first demyelinating clinical attack before age of 18 years is rare, with an overall incidence of 2 -5 % in pediatric population and is a leading cause of disability in children¹
- Ocrelizumab is an Anti-CD20 monoclonal antibody that has been widely used in adults for Primary Progressive Multiple Sclerosis (PPMS)
- To our knowledge Ocrelizumab has not been used in the management of MS in children in literature thus far.

CA SE REPORT:

- An 11-year-old boy, previously healthy, presented to clinic with a one week history of diplopia and dizziness.
- Nuerological examination revealed left sided internuclear opthalmoplegia (INO) and nystagmus. Higher mental function and rest of nuerological examination was unremarkable.

INVESTIGATIONS

- Routine Blood Investigations : Unremarkable
- Complete Autoimmune profile including ANA, Anti-DsDNA, Anti-MOG, NMDA and Aquaporin-4 Antibodies : Negative
- CSF oligoclonal bands paired with blood **Positive**
- Intial MRI of brain revealed bilateral frontal and parietal subcortical and periventricular FLAIR and T2 hyperintense foci Multiple (*Image 1*)



Image 1 MRI Brain : T2 weighted FLAIR sequence show bilateral frontal and parietal subcortical and periventricular hyperintense signal.

INITIAL MANAGEMENT

- Pulse IV methylprednisolone for 5 days
- Followed by tapering oral steroids over 4 weeks

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Image 2 MRI Brain : T2 weighted FLAIR sequence show new lesion in subcortical white matter



FOLLOW UP

- At 4 weeks follow up , his nystagmus improved but continued to have persistent left INO.
- He developed further new lesions in left subcortical white matter in the fronto-parietal area (*Image 2*)
- The diagnosis of Relapsing Remitting Multiple Sclerosis (RRMS) was made as per Modified McDonald's Criteria
- In view of compliance issue with first line DMDs (daily injections, daily oral medications) it was decided to commence the child on Ocrelizumab 6 monthly infusions.
- At 2 years follow up, the child had 2 MRI scans on a yearly basis which didn't show any new lesions or progression of the previous lesions
- No clinical relapses seen within 2 years of follow up.

CONCLUSION

- Relapsing-Remitting course of MS in children is the most common, occurring in > 98% (2)
- Our case demonstrates that Ocrelizumab can be safely used in children with RRMS, particularly where compliance with daily oral/injectable medications is a concern.
- Further long-term studies are warranted on the use of Ocrelizumab in children.

References :

(1)Bigi S, Banwell B. Pediatric multiple sclerosis. J Child Neurol. 2012 Nov;27(11):1378-83. doi: 10.1177/0883073812452784. *Epub 2012 Aug 21* (2) Amy Waldman, Jayne Ness, Daniela Pohl, Isabella Laura Simone, Banu Anlar, Maria Pia Amato, Angelo GhezziNeurology Aug 2016, 87