Low-dose Rituximab in Children with Anti-NMDAR encephalitis

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SD prepared the initial draft of manuscript and reviewed the literature

NS- critical review of the manuscript and reviewed the literature, edited the final version of manuscript and will act as guarantor

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Dear Sir,

We read with great interest the study by Pranzatelli et al on low-dose Rituximab (1). The authors have demonstrated that four-weekly doses of 300mg/m^2 (total dose 1200 mg/m^2) of Rituximab leads to similar results compared to 375 mg/m^2 (total dose 1500 mg/m^2). The main objective in using Rituximab is to achieve CD19 suppression. We wish to share our early experience in using low-dose Rituximab in two children with anti-NMDAR encephalitis. We used a weekly dose of Rituximab of 200mg/m^2 in two children suffering from anti-NMDAR encephalitis. The dose was reduced to limit the cumulative drug dosage, hospital stay and the incurring cost of therapy. CD19 levels were checked in both children after 2 weeks. Both the children achieved the targeted levels of CD19 <0.05% at three weeks after the first dose of Rituximab. They had received a cumulative dose of 400mg/ m^2. On follow-up, one child showed a good clinical response and did not need any further immunosuppression. Whereas, the other child showed no clinical response (in spite of sustained low CD 19 of < 0.05% for three months) and was given further immunosuppression with cyclophosphamide.

Based on preliminary experience with these two children, we concur with the authors observation that low-dose Rituximab is not inferior to standard dose of 1500 mg/m^2. We suggest monitoring of CD19 counts after before each dose of Rituximab to reduce the cumulative drug given to patients. The cumulative dose to achieve the targeted levels of CD19 of less than 0.05% may be even lower than 1200 mg/ m^2. There may be variations in individual responses to Rituximab explaining the CD19 suppressions achieved by us using the very low dose of rituximab. The lower dose is an attractive option to reduce the cost of therapy and possibly may lower the long term complications. The approach may be particularly suited for conditions like anti-NMDAR encephalitis where prolonged immunosuppression may not be needed.

References

1. Pranzatelli MR, Tate ED, McGee NR, MacArthur CA. Evaluation of Responsiveness to Reduced-dose Rituximab in Corticotropin/IVIg/Rituximab Combination Immunotherapy for Opsoclonus-Myoclonus Syndrome. Pediatric Neurology. 2018.