

Clinical commentary on “Two cases of anaphylactic shock by methylprednisolone in neuromyelitis optica”

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Despite their different pathophysiological mechanisms, high-dose corticosteroid therapy is effective to treat relapses in multiple sclerosis (MS) and also seems to be useful during neuromyelitis optica spectrum disorder (NMOSD) exacerbations.¹

Expert consensus publications recommend using 1 g of methylprednisolone succinate ester in NMOSD.² Nevertheless, these recommendations are not based on clinical trials. There is no evidence of superiority of methylprednisolone over high doses of different corticosteroids in inflammatory demyelinating diseases.³ In fact, some small studies suggest that corticosteroids without succinate ester such as dexamethasone seem to be as effective and safe as methylprednisolone in isolated optic neuritis, MS, and other inflammatory diseases.^{4,5} Regardless of this lack of evidence, the vast experience of methylprednisolone use makes it difficult to suggest any other treatment as first choice.

Hypersensitivity reactions to systemic glucocorticoids are rare. Although the exact incidence is unknown, they appear to occur in $\geq 0.1\%$ of parenteral administrations.⁶ Anaphylactic shock due to corticosteroids is seldom reported and could be more frequent with succinate ester corticosteroids. Regarding MS, all anaphylactic reactions have been described in relationship to methylprednisolone use, but this is easily explained by their worldwide use in MS relapses.

Different patterns of cross-reactivity between corticosteroids have been described. For that reason, after an allergic reaction, it is mandatory to perform a cross-reactivity test before switching to an alternative drug.⁷ Where treatment cannot be delayed, therapeutic plasma exchange could be considered.

In summary, corticosteroids without succinate ester could be a good option to avoid hypersensitivity

reactions in some cases, but large randomized clinical trials and observational studies comparing different corticosteroids are necessary to evaluate not only their efficacy but also their safety.

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References

1. Yamasaki R, Matsushita T, Fukazawa T, et al. Efficacy of intravenous methylprednisolone pulse therapy in patients with multiple sclerosis and neuromyelitis optica. *Mult Scler* 2016; 22(10): 1337–1348.
2. Trebst C, Jarius S, Berthele A, et al. Update on the diagnosis and treatment of neuromyelitis optica: Recommendations of the Neuromyelitis Optica Study Group (NEMOS). *J Neurol* 2013; 261(1): 1–16.
3. La Mantia L, Eoli M, Milanese C, et al. Double-blind trial of dexamethasone versus methylprednisolone in multiple sclerosis acute relapses. *Eur Neurol* 1994; 34(4): 199–203.
4. Mehrotra A, Saxena R, Jaffery N, et al. Comparative evaluation of megadose methylprednisolone with

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- dexamethasone for treatment of primary typical optic neuritis. *Indian J Ophthalmol* 2007; 55(5): 355–359.
5. Sadra V, Khabbazi A, Kolahi S, et al. Randomized double-blind study of the effect of dexamethasone and methylprednisolone pulse in the control of rheumatoid arthritis flare-up: A preliminary study. *Int J Rheum Dis* 2014; 17(4): 389–393.
 6. Klein-Gitelman M and Pachman L. Intravenous corticosteroids: Adverse reactions are more variable than expected in children. *J Rheumatol* 2018; 25(10): 1995–2002.
 7. Vatti R, Ali F, Teuber S, et al. Hypersensitivity reactions to corticosteroids. *Clin Rev Allergy Immunol* 2013; 47(1): 26–37.