

Investigating the Effect of Meningococcal Vaccination in Patients with Myasthenia Gravis Undergoing Complement Inhibitor Therapy

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Background & Objective

Patients receiving complement inhibitor therapy are at increased risk of life-threatening invasive meningococcal disease. Current guidelines recommend vaccination against meningococcal serogroups ACWY and B before initiating therapy. The aim of this study was to evaluate the rates of protection achieved following meningococcal vaccination in patients with generalized myasthenia gravis (gMG) undergoing complement inhibitor therapy.

Methods

Serum samples were collected at least two weeks post-vaccination. Immunogenicity was assessed using a serum bactericidal antibody assay against serogroups ACWY. A protective titer was defined as $\geq 1:8$.

Results

After the first dose, serogroup-specific protection rates were as follows: MenA, 20/31 (65%); MenC, 20/31 (65%); MenW, 17/31 (55%); and MenY, 23/31 (74%). In terms of overall response after the first dose: 12/31 (39%) patients were protected against all serogroups, 5/31 (16%) showed no serological response and 14/31 (45%) exhibited only partial protection against different serogroups.

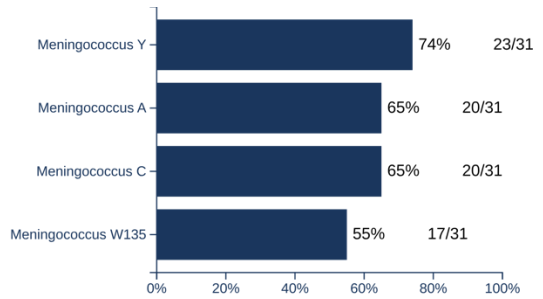


Figure 1. Serogroup-specific protection rates shown as percentage of patients with protective neutralizing antibodies (titres $\geq 1:8$) by serogroup

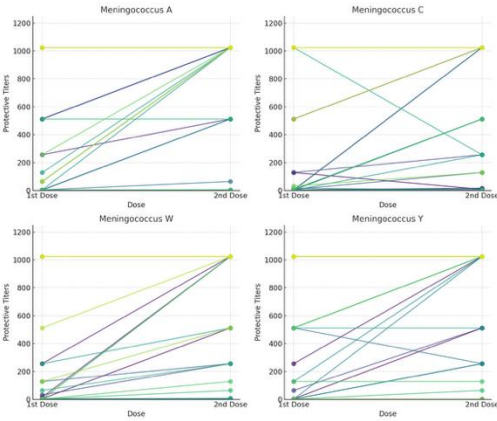
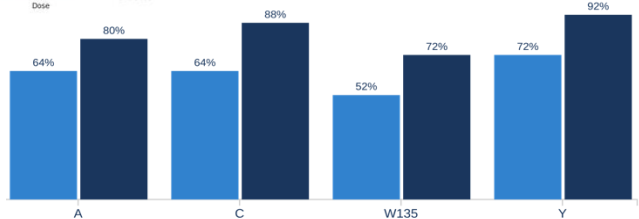


Figure 3. Comparison of protection rates (titres $\geq 1:8$) after the first and second doses of meningococcal vaccination across serogroups

In the subgroup of 25 patients who received two doses, protection rates improved as follows: MenA increased from 16/25 (64%) to 20/25 (80%); MenC from 16/25 (64%) to 22/25 (88%); MenW from 13/25 (52%) to 18/25 (72%); and MenY from 18/25 (72%) to 23/25 (92%). After the second dose, 12/25 (48%) patients achieved complete seroprotection while 13/25 (52%) remained partial responders against different serogroups.

Figure 2. Slope chart illustrating changes in antibody titers after the first and second doses of meningococcal vaccination against serogroups A, C, W, and Y in 25 patients with gMG.



Conclusions

Most patients developed only a partial antibody response against various meningococcal serogroups after the initial meningococcal vaccination. ACWY second doses are recommended to enhance protection in patients with gMG undergoing complement inhibitors.



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