HBV Vaccine response following anti-CD20 therapies in Multiple Sclerosis

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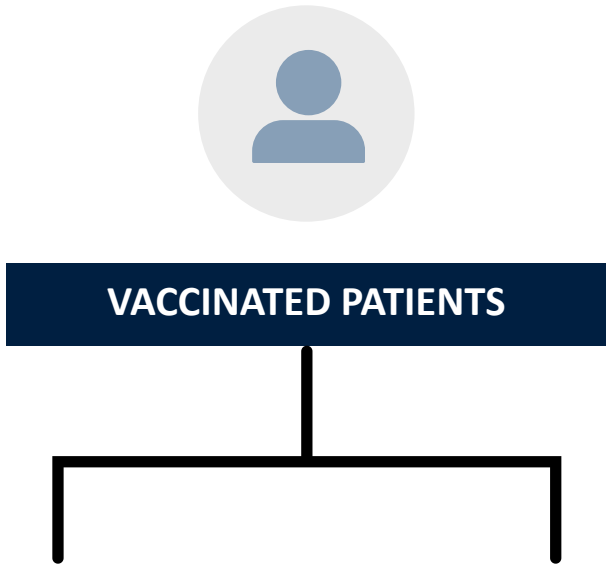
Introduction

In this real-world study, we aimed to characterize the effective immunization to Hepatitis B Virus (HBV) in a cohort of Multiple Sclerosis (MS) patients who started therapy with anti-CD20 monoclonal antibodies: ocrelizumab, ofatumumab and ublituximab and to monitor immunization along the follow-up.

Materials and methods

We included patients diagnosed with MS who started therapy with anti-CD20 monoclonal antibodies from January 1st 2024 to January 31st 2025. Data were extracted on June 30th 2025. Demographic, clinical, and serological data, including anti-HBs levels, were collected.



With reference to the **therapy start**, we defined three different group:

- patients vaccinated according to our previous definition **before** treatment start;
- patients who completed the third dose or received the **booster dose** after the start of therapy;
- patients who started vaccination **after** the start of therapy.

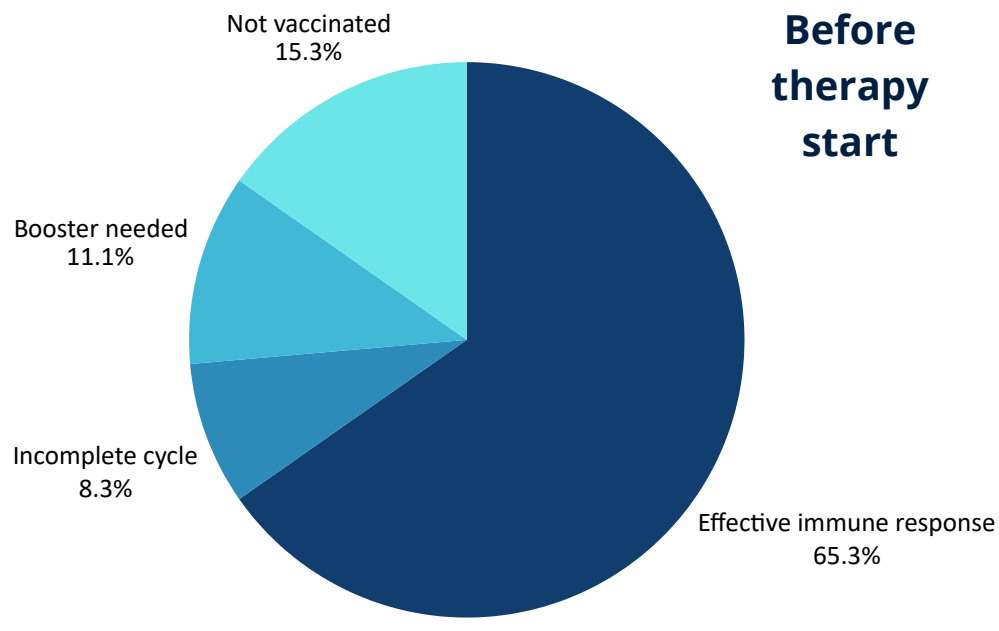
Effective immune response was defined as anti-HBs titer ≥11 mIU/ml. Serological data were collected before treatment initiation and after 3 months.

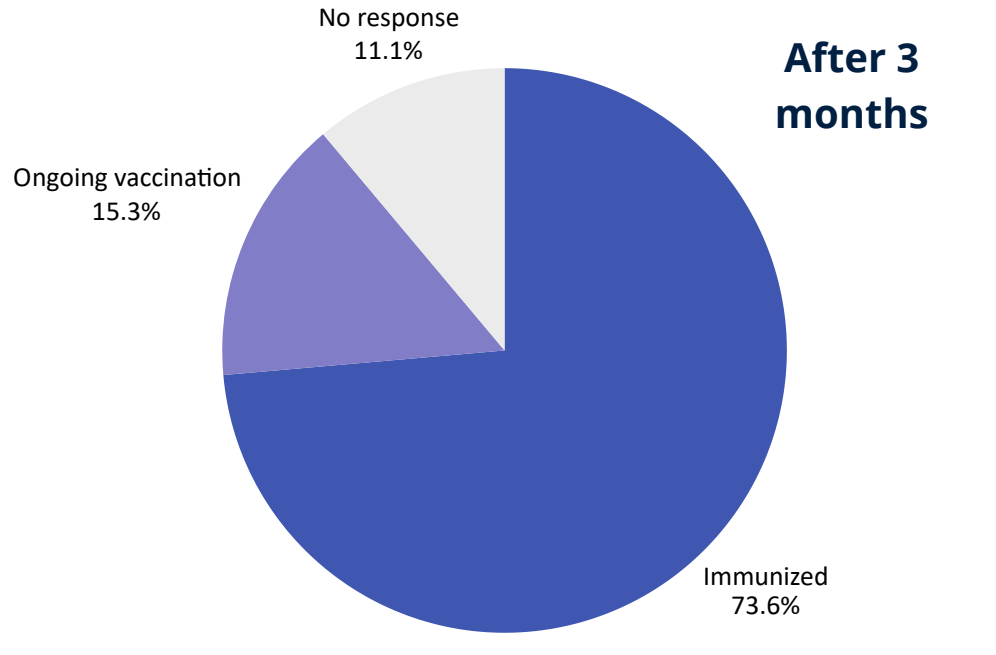
Results

A total cohort of 72 patients was enrolled (77.8% female), mean age 41.9 ± 9.7 years and mean BMI 24.1 ± 5.5 kg/m². The median disease duration was 5.5 years (IQR: 2–16.5). The mean treatment duration was 10.6 ± 3.8 months.

Distribution of anti-CD20 therapies:

- Ofatumumab 68.0% (49)
- Ocrelizumab 29.2% (21)
- Ublituximab 2.8% (2)





Discussion

In our real-world study, 11.1% of patients showed incomplete or weakened immunization against HBV. However, 73.6% of them maintained adequate immunization after therapy start.

Conclusions

There is limited and conflicting evidence on the ability of anti-CD20–treated patients to mount a vaccine response to both primary and recall vaccinations. Further studies are needed to better characterize determinants and predictors of full/incomplete HBV immunization in MS patients undergoing anti-CD20 therapies.

Acknowledgements and Disclosures: *The author have nothing to disclose*