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Letter to the Editor

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Letter to the Editor (Case report)

Transient negativity for the anti-TIF1γ antibody before treatment in juvenile dermatomyositis

Yuji Fujita [1,*], Takashi Matsushita[2], Megumi Sato[1], Shigemi Yoshihara[1]

[1]Department of Pediatrics, Dokkyo Medical University, Tochigi, Japan
[2]Department of Dermatology, Faculty of Medicine, Institute of Medical, Pharmaceutical and Health Sciences, Kanazawa University, Kanazawa, Japan

*Correspondence to: Yuji Fujita, Department of Pediatrics, Dokkyo Medical University, 880 Kitakobayashi, Mibu, Shimotsuga, Tochigi 321-0293, Japan.
E-mail: fujitay@dokkyomed.ac.jp

Dear Editor, Myositis-specific autoantibodies can aid in the diagnosis of JDM and can further help understand its clinical features. However, measurement of the anti-transcription intermediary factor 1 (TIF1)γ antibody using ELISA can sometimes yield false-negative results. Herein, we describe a case of JDM who transiently tested negative for the anti-TIF1γ antibody prior to treatment.

The patient was a 7-year-old girl with a skin rash accompanied by itching who was being treated for atopic dermatitis (AD). She subsequently developed thigh and joint pain, resulting in a visit to our hospital. She was diagnosed with JDM based on clinical findings, magnetic resonance imaging, pathological findings on muscle biopsy and anti TIF1γ antibody testing. We previously reported this case as JDM diagnosed with AD [1]. At the time of initial examination, the anti-TIF1γ antibody titre on ELISA was 39, slightly above the cut-off value of 32. However, when retested 17 days later, the result was 15, below the cut-off point, indicating a spontaneous negative. All other myositis-specific autoantibodies were negative, and we considered the possibility that the ELISA measurement of the anti-TIF1γ antibody was a false negative. We therefore performed western blot analysis of immunoprecipitated proteins (IP/WB) in the remaining serum collected on the 8th day after the initial consultation, and the anti-TIF1γ antibody was positive. When anti-TIF1γ antibody was measured in the remaining serum on the 8th and 20th days, the levels were high (54 and 56, respectively). The anti-TIF1γ antibody result on day 17 was therefore determined to be a false negative. The patient's anti-TIF1γ antibody levels gradually decreased after treatment with corticosteroids and tacrolimus (Fig. 1A).

Mulhearn *et al.* [2] reported that anti-TIF1γ antibody measurement using ELISA assay may yield false-negative results at an incidence of 2% (1/42) in their study. There have also been reported cases of DM/JDM in which ELISA assay showed a low autoantibody titre, but IP/WB revealed positive results for anti-TIF1γ antibody [3, 4]. In our case, re-examination prior to treatment revealed a negative result

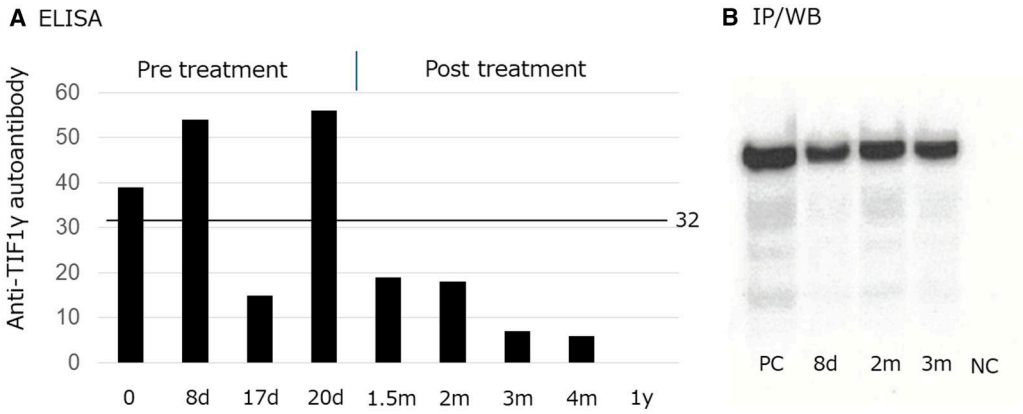

Figure 1. Results of the anti TIF1γ antibody titre using ELISA. On day 17, anti TIF1γ, the antibody titre became negative without treatment, subsequently becoming positive again. This antibody gradually decreased after treatment (A). Sera were measured by IP/WB on the 7th day (before treatment), 2 months (after treatment initiation) and 3 months (after treatment initiation), and all results were positive (B). IP/WB: western blot analysis of immunoprecipitated proteins; NC: negative control; TIF1: transcription intermediary factor 1; PC: positive control

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below the cut-off value of 32, but this result subsequently became positive again. IP/WB measurements were also performed using sera at antibody titres of 18 (at 2 months) and 7 (at 3 months) after treatment initiation, and both were positive (Fig. 1B), although we were unable to re-examine the serum on day 17 before treatment, when a false-negative antibody titre of 15 was obtained.

It has previously been reported that anti-TIF1γ antibody measured using ELISA assay are associated with disease activity, and decrease following treatment [5]; however, this is the first report of a case of a transient negative outcome without treatment. This experience suggests that when the anti-TIF1γ antibody titre on ELISA is low, re-examination using the ELISA assay or validation with IP/WB should be performed.

Data availability

The authors confirm that the data supporting the findings of this study are available in the article.

Contribution statement

Y.F. drafted and revised the manuscript. T.M., M.S. and S. Y. critically revised the manuscript for important intellectual content. All the authors have read and approved the final version of the manuscript.

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