American Academy of Neurology™

Evidence in Focus:

Delandistrogene Moxeparvovec Gene Therapy in Individuals with Duchenne Muscular Dystrophy

Summary for clinicians

This is a summary of the American Academy of Neurology (AAN) Evidence in Focus, "Delandistrogene Moxeparvovec Gene Therapy in Individuals with Duchenne Muscular Dystrophy" which was published online in *Neurology*® on May 14, 2025.

An AAN Evidence in Focus is a type of systematic review that uses an abbreviated version of the AAN guideline methodology to highlight the strength of evidence underlying new therapies and facilitate discussion concerning their appropriate use. This process does not generate specific recommendations for care. The accompanying discussion is intended to aid the practicing neurologist, other medical professionals, patients, and families in interpreting the published data to inform clinical decision making.

Please refer to the full Evidence in Focus at *AAN.com/guidelines* for more information, including a detailed review of the evidence and additional clinical considerations for the use of delandistrogene moxeparvovec.

Evidence in Focus Scope

This Evidence in Focus reviews the current evidence on the efficacy and adverse effects of delandistrogene moxeparvovec in patients with Duchenne muscular dystrophy (DMD) and presents clinical considerations regarding use. Delandistrogene moxeparvovec (trade name Elevidys) is a single-dose gene transfer therapy approved for the treatment of DMD. This type of gene therapy delivers (using an adeno-associated virus) a truncated version of the *DMD* gene ("microdystrophin") to attempt to restore partial function to the gene.

Summary of Evidence

Six clinical trials evaluating the motor function and safety data of delandistrogene moxeparvovec were identified, of which four had peer-reviewed data available. From the four studies with available data (two Class I and two Class III), exposure data is available on 134 boys aged ≥4 to <8 years, of which 128 are ambulatory. Data is not available for individuals outside of this age range.

Summary of Conclusions

Both Class I studies failed to meet the primary functional motor outcome as assessed by change in the North Star Ambulatory Assessment score. Several secondary functional motor outcomes demonstrated improvement in the treatment group with small effect sizes, not meeting statistical significance from hierarchical analysis. Corticosteroid dose exposure was higher in the treatment group in the first 12 weeks post-infusion, potentially contributing to measured differences between groups. Safety outcomes were similar across studies with multiple treatment-related adverse events, including peri-infusion effects, immune myositis and myocarditis, thrombocytopenia, and liver toxicity. No deaths or permanent organ failure were associated with the treatment in the clinical trials; however, a first death has been reported in clinical practice.

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Key Considerations for Use

Despite not demonstrating efficacy in its primary outcome, delandistrogene moxeparvovec has been approved by the US Food and Drug Administration (FDA) for use in boys with DMD. This decision was supported by the relative safety of the product and small improvement signals in the secondary outcome measures in the phase 3 clinical trial. As the drug may now be actively prescribed in the US and other countries, providers should be aware of the limitations of the treatment and the need to monitor and counsel patients for immune-related side effects including myositis, myocarditis, thrombocytopenia, liver injury, and death, which may require expanded clinical infrastructure.

Suggestions for Future Research

Additional clinical trials and careful collection of real-world evidence from treated patients will be essential to establish short- and long-term effectiveness and inform understanding of benefits and risks of delandistrogene moxeparvovec across the lifespan.

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Copies of this summary and additional companion tools are available at *AAN.com/guidelines* or through AAN Member Services at (800) 879-1960.

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