DALFAMPRIDINE COMBINED WITH PHYSICAL THERAPY MAY IMPROVE TREATMENT EFFECTS IN DALFAMPRIDINE NON-RESPONDERS WITH MULTIPLE SCLEROSIS: A CASE STUDY

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INTRODUCTION

- **Dalfampridine extended-release (Ampyra ®) (D-ER)** is a pharmacological treatment commonly prescribed to individuals with multiple sclerosis (MS) to improve walking speed
- 60% of people who take D-ER do not demonstrate clinically relevant improvement ("non-responders")
- A clinically important improvement with D-ER is defined as ≥20% increase in gait speed
- No published studies examining the potential of physical therapy (PT) to augment the treatment effects of D-ER.

OBJECTIVES

To examine the effects of D-ER combined with PT after a period of D-ER alone on:

- Gait Speed
- Dual-task performance
- Balance
- Cognition
- Fatigue
- Patient-reported outcomes related to disability and walking impairment

METHODS

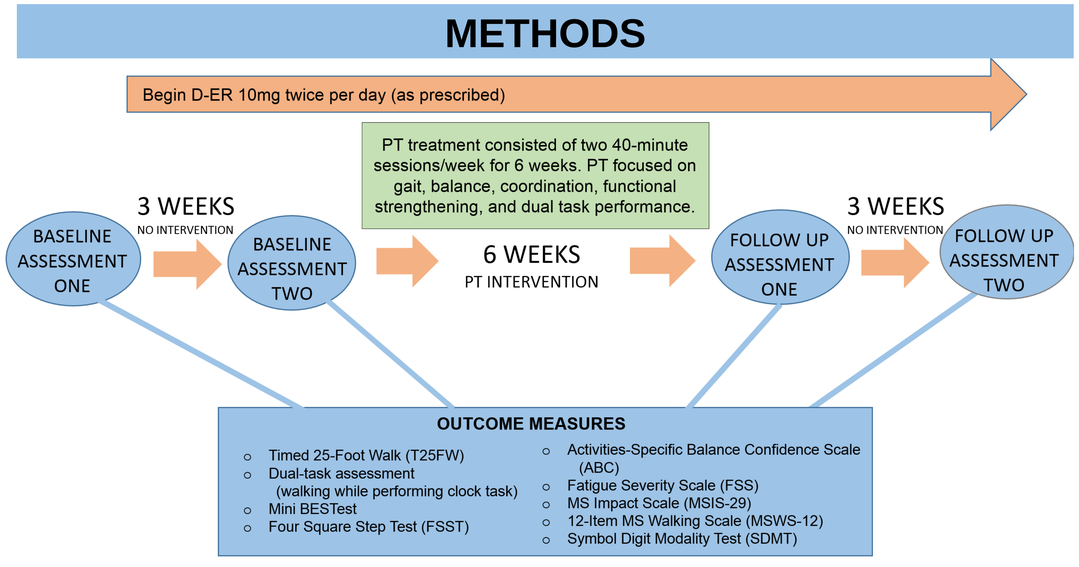



Image 1


Image 2

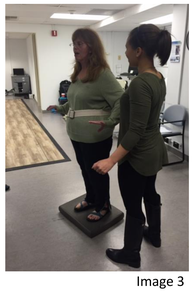
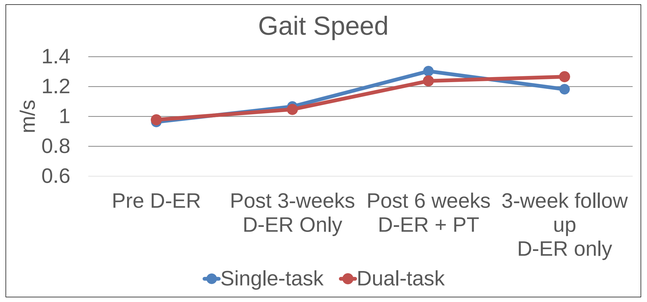


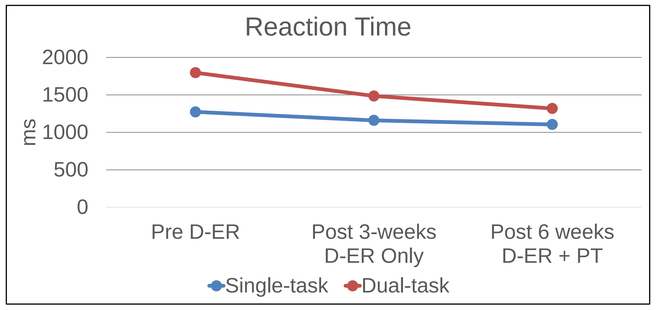
Image 3

Examples of PT intervention including treadmill walking (image 1), coordination training (image 2), and balance training (image 3)

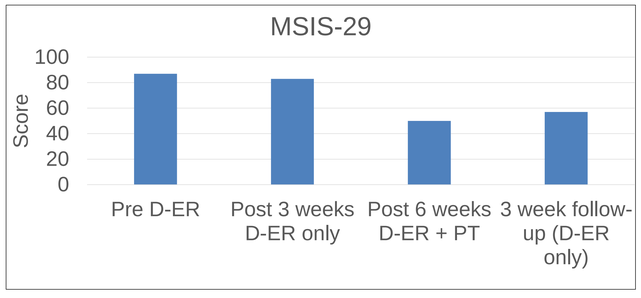
RESULTS AND OUTCOMES



After 2 weeks on D-ER treatment, the participant demonstrated a 7% improvement in gait speed on theT25FW, indicating that she is a non-responder. After 6 weeks of D-ER + PT, she demonstrated a 21% gait speed increase.

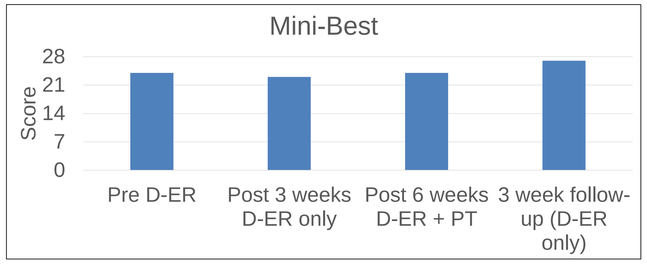


Greater improvement in cognitive processing speed during dual task activity was demonstrated during the D-ER only phase, suggesting a greater effect from D-ER than from D-ER + PT.



Progressive improvement was demonstrated on the MSIS-29 from visit 1 to visit 4 with an overall clinically significant improvement of 62.5 points.

The participant also demonstrated clinically significant improvements on the ABC (24.3 points) and the MSWS-12 (62.5 points) between visits 2 and 4.



No clinically significant change in balance was captured by the Mini BESTest over the course of treatment.

SUMMARY

After 6 weeks of D-ER + PT, the participant demonstrated clinically significant improvements on the T25FW, single-task and dual-task gait speeds, ABC, MSIS-29, MSWS-12, and FSST, all of which were retained at follow up. Conversely, the participant showed greater improvement in dual-task interference on cognitive processing speed (reaction time while walking) during the D-ER only phase, indicating a greater effect from D-ER than from D-ER + PT.

CONCLUSION

For individuals with MS who have experienced a sub-meaningful response to D-ER, combining PT with D-ER may improve:

- gait speed
- dual-task performance
- perceived disease impact

The results suggest that further investigation of the combination of PT and D-ER in people with MS is warranted, as well as examination of whether PT (without D-ER) is an effective alternative to D-ER in those who are non-responders to the pharmacological intervention.

ACKNOWLEDGEMENTS

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