The increasing variety of disease-modifying therapies (DMTs) and the lack of current treatment guidelines in multiple sclerosis (MS) challenge neurologists to make appropriate treatment decisions. The increasing variety of disease-modifying therapies (DMTs) and the lack of current treatment guidelines in multiple sclerosis (MS) challenge neurologists to make appropriate treatment decisions.

**METHODS**

The effectiveness of an online educational intervention focusing on the science and impact of novel DMTs for MS was analyzed using a case-based pre-assessment/post-assessment study design.

**Assessment Method:**
- The outcomes survey method to measure performance included knowledge- and case-based multiple-choice questions that mirror clinical encounters and the elements needed for decision making derived from current evidence-based recommendations.
- Confidentiality of survey respondents was maintained and aggregated prior to analysis.
- Non-practicing clinicians and clinicians not involved in the care of patients with MS were excluded from the study.
- Responses to questions associated with the clinical cases were collected and compared with baseline data (collected prior to participation in the educational intervention) in order to assess the effect of the education.

Overall mean scores and pooled standard deviations were calculated for the aggregated participant pre- and post-assessment survey responses. Cohen’s $d$ was used to calculate the effect size of the intervention. Effect sizes greater than 0.8 are large, between 0.6 and 0.8 are medium, and less than 0.4 are small.

**RESULTS**

- Neurologists ($n=160$) were 35.6% (moderate effect size $d=0.55$) more likely to make evidence-based practice choices after participation in the activity.
- Specifically, US neurologists ($n=47$) were 20% (effect size $d=0.28$) more likely and OUS neurologists ($n=113$) were 41.1% (effect size $d=0.66$) more likely to make evidence-based practice choices after participation in the activity.
- Specific areas of improvement included:
  - Awareness of the pregnancy risk of several MS DMTs (US, P<.05; OUS, P<.001) (Figure 2)
  - Counseling patients about adverse effects of dimethyl fumarate (DMF) (US, P<.01; OUS, P<.004) (Figure 3)
  - Recognizing Goodpasture syndrome as a potential adverse event of alemtuzumab (US, P<.003; OUS, P<.001) (Figure 4)
  - Counseling patients about adverse effects of fingolimod (US, P<.06; OUS, P<.001) (Figure 4)

**Conclusions**

This study demonstrated the success of a targeted educational intervention on improving the knowledge and case-based performance of US and OUS neurologists regarding decisions about new DMTs in MS. These statistically significant improvements provide strong evidence that well-designed online text-based instruction is a useful methodology for knowledge transfer among neurologists. In particular, an increase in neurologists’ awareness of adverse events associated with new MS DMTs has the potential to improve the monitoring for and mitigation of these risks in clinical practice.