Evolving Treatment Paradigms in Wilson Disease: Impact of Micro CME on Physician Knowledge and Confidence

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BACKGROUND

Early intervention for Wilson Disease (WD) is critical to preventing disease progression. Anti-copper treatment including chelation therapy play a vital role in the comprehensive management of WD and can improve patient outcomes, and new therapies may have the potential to address unmet needs in disease management. However, physicians who care for patients with WD may require education to improve knowledge and confidence around employing newer treatment strategies. This study was examined whether online CME could improve the knowledge and confidence of gastroenterologists/hepatologists regarding the advances in the treatment of WD.

METHODS

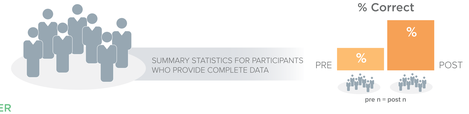
The CME intervention comprised of a series of 5 online CME micro modules led by 3 expert faculty, respectfully. Educational effect was assessed using a repeated-pair design with pre-/post-assessment. Two multiple choice questions assessed knowledge, and 1, rated on a Likert-type scale, assessed confidence. A paired samples t-test was conducted on overall average number of correct responses and for confidence rating, and a McNemar's test was conducted at the question level (significance level, $P < .05$). The activity posted on November 16, 2023; data were collected through February 1, 2024.

Gastroenterologists/ Hepatologists (Gastro/Heps) (n = 123)

How to Read the Linked Learner Assessment

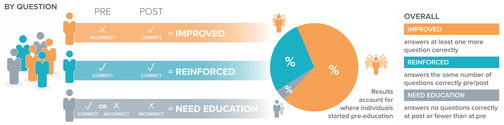
OUTCOMES COMPLETERS

Each individual completed BOTH the pre and post-education questions – *SAME individuals pre and post-education*



LINKED LEARNER

Each individual tracked pre- and post-education – *Learners serve as their own controls*

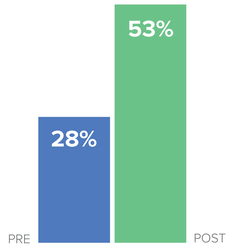


RESULTS

OVERALL

Gastroenterologists/Hepatologists (n = 123)

AGGREGATED RESULTS



CHI-SQUARE TEST

$P < .001$

SIGNIFICANCE ($P < .05$)

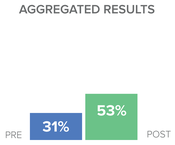
QUESTION 1 RESULTS

A statistically significant improvement was achieved regarding identification of the unmet needs in the management of WD.

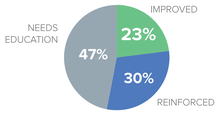
QUESTION: Based on clinical evidence, which of the following is an unmet medical need in Wilson disease? (Correct Answer: Neurologic worsening)

Gastroenterologists/Hepatologists (n = 123)

AGGREGATED RESULTS



LINKED LEARNING RESULTS



$P < .001$

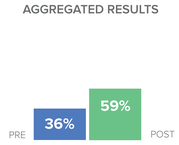
QUESTION 2 RESULTS

A statistically significant improvement was achieved regarding the latest clinical data for the use of novel trientine salts for the treatment of WD.

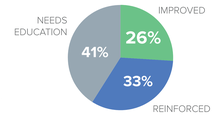
QUESTION: What did the results of the CHELATE study show in regard to bioavailable copper, as measured by nonceruloplasmin-bound copper (NCC) using speciation, in patients who received penicillamine compared with those who received trientine tetrahydrochloride? (Correct Answer: Trientine tetrahydrochloride was non-inferior to penicillamine)

Gastroenterologists/Hepatologists (n = 123)

AGGREGATED RESULTS



LINKED LEARNING RESULTS



$P < .001$

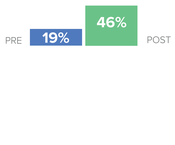
QUESTION 3 RESULTS

Low baseline awareness of storage requirements of trientine salts, with achievement of statistically significant improvement after education.

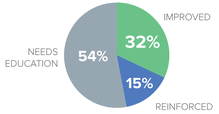
QUESTION: What is the storage requirement for trientine dihydrochloride? (Correct Answer: Refrigeration)

Gastroenterologists/Hepatologists (n = 123)

AGGREGATED RESULTS



LINKED LEARNING RESULTS



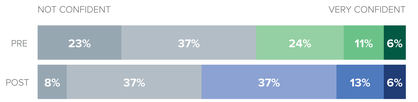
$P < .001$

SELF-EFFICACY RESULTS

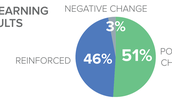
After participating, 51% of gastroenterologists/ hepatologists had a measurable improvement in confidence in their ability to identify patients who would benefit from newer treatment strategies for WD.

QUESTION: How confident are you right now in identifying patients who would benefit from newer treatment strategies for Wilson disease based on the latest clinical evidence? (Select ranking from 1 [Not confident] to 5 [Very confident])

Gastroenterologists/Hepatologists (n = 123)



LINKED LEARNING RESULTS



TOTAL AVERAGE CONFIDENCE SHIFT FOR THOSE WHO INCREASED CONFIDENCE

CONCLUSIONS

This study demonstrated the success of online CME at improving the knowledge and confidence of gastroenterologists/ hepatologists related to advances in the treatment of WD. Persistent educational gaps were identified for future educational targets.

ACKNOWLEDGEMENTS

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No financial relationships to disclose

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Improving Knowledge in PBC Management Beyond First-Line Therapy: Structured Learning Increases Competence and Confidence

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BACKGROUND

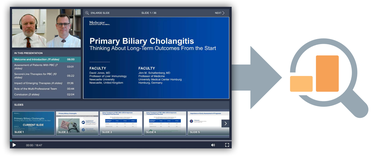
- Up to ~40% of patients with primary biliary cholangitis (PBC) have an inadequate response or poor tolerability to ursodeoxycholic acid (UDCA), leading to an increased risk of end-stage liver disease[1]
- Second-line therapy can improve prognosis but is often not implemented in a timely fashion[2]
- We sought to improve and measure physician knowledge, competence, and confidence in identifying these patients earlier by providing expert-led short-format education

METHODS

Physicians participated in an 18-minute, video-based, chaptered, online CME activity with synchronized slides[3]

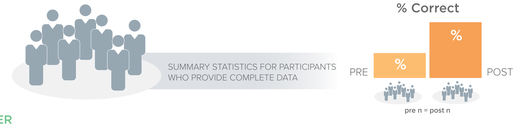
Gastroenterologists/ Hepatologists (Gastro/Heps)
(n = 154)

Primary Care Practitioners (PCPs)
(n = 92)



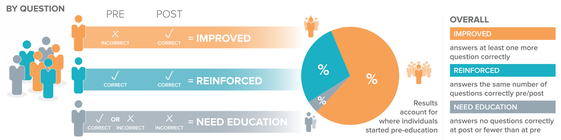
OUTCOMES COMPLETERS

Each individual completed BOTH the pre and post-education questions – *SAME individuals pre and post-education*



LINKED LEARNER

Each individual tracked pre- and post-education – *Learners serve as their own controls*

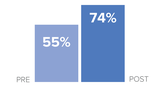


RESULTS

OVERALL

Gastro/Heps (n = 154)

AGGREGATED RESULTS



COHEN'S d

0.83

EFFECT SIZE	EDUCATIONAL IMPACT
< .20	MODEST
.20 - .49	SMALL
.5 - .79	MODERATE
≥0.80	LARGE

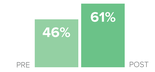
CHI-SQUARE TEST

***P* <.001**

SIGNIFICANCE (*P* <.05)

PCPs (n = 92)

AGGREGATED RESULTS



COHEN'S d

0.64

EFFECT SIZE	EDUCATIONAL IMPACT
< .20	MODEST
.20 - .49	SMALL
.5 - .79	MODERATE
≥0.80	LARGE

CHI-SQUARE TEST

***P* <.001**

SIGNIFICANCE (*P* <.05)

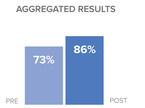
QUESTION 1 RESULTS

Significant improvements were observed in physicians' knowledge of the importance of liver fibrosis ultrasound in regular assessments.

QUESTION: In patients with primary biliary cholangitis (PBC), in addition to biochemical monitoring with alkaline phosphatase (ALP) and bilirubin, which other measure is MOST important to assess regularly to predict clinical outcomes?
(Correct Answer: Liver fibrosis ultrasound)

Gastro/Heps (n = 154)

AGGREGATED RESULTS

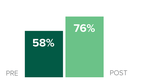


LINKED LEARNING RESULTS

P <.001

PCPs (n = 92)

AGGREGATED RESULTS



LINKED LEARNING RESULTS

P <.001

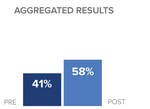
QUESTION 2 RESULTS

Competence in identifying patients at risk for progression who need an earlier than normal follow-up was significantly improved for gastro/heps, but not for PCPs.

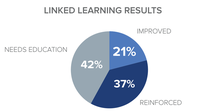
QUESTION: A 31-year-old female patient is diagnosed with PBC and at baseline had a high ALP level (480 IU/L) and a high FibroScan of 11 KPa. You start her on therapy with ursodeoxycholic acid (UDCA). When should her treatment response be assessed?
(Correct Answer: Before 12 months)

Gastro/Heps (n = 154)

AGGREGATED RESULTS



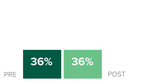
LINKED LEARNING RESULTS



P <.010

PCPs (n = 92)

AGGREGATED RESULTS



LINKED LEARNING RESULTS

P =NS

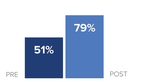
QUESTION 3 RESULTS

Significant improvements in physicians' competence related to implementing second-line therapy at the right time.

QUESTION: At a follow-up visit, after starting UDCA therapy, your patient with PBC shows bilirubin normalization but no ALP decrease. What's the next best step for this patient?
(Correct Answer: Start second-line therapy)

Gastro/Heps (n = 154)

AGGREGATED RESULTS

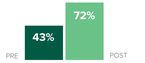


LINKED LEARNING RESULTS

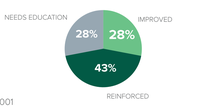
P <.001

PCPs (n = 92)

AGGREGATED RESULTS



LINKED LEARNING RESULTS



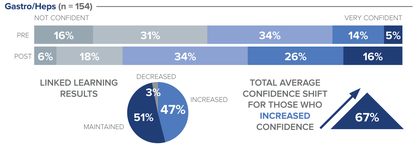
P <.001

CONFIDENCE ANALYSIS

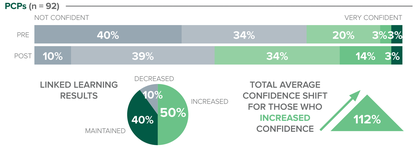
After participating in the activity, 47% of gastro/heps and 50% of PCPs had measurable improved confidence related to assessing the need for second-line PBC therapy.

QUESTION: How confident are you right now in assessing the need for second-line therapy in patients with PBC? (Select ranking from 1 [Not confident] to 5 [Very confident])

Gastro/Heps (n = 154)



PCPs (n = 92)



CONCLUSIONS

- This study demonstrates the success of expert-led online, video-based education in improving knowledge, competence and confidence in optimizing PBC management beyond first-line therapy
- Both improvement and reinforcement have been shown to positively correlate with confidence increases and intention to make clinical practice changes,[4] suggesting that these clinicians are likely to take steps to identify patients needing second-line therapy earlier. This could lead to improved overall outcomes for these patients.

ACKNOWLEDGEMENTS

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For more information, contact:
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2. European Association for Study of Liver. EASL Clinical Practice Guidelines: the diagnosis and management of patients with primary biliary cholangitis. *J Hepatol* 2017;67:145-172.
3. Jones D, Schattenberg JM. Biliary cholangitis: thinking about long-term outcomes from the start. Launched: February 2024; data as April 2024. Available at www.medscape.org/viewarticle/1000182
4. Lucero KS, Chen P. What do reinforcement and confidence have to do with it? A systematic pathway analysis of knowledge, competence, confidence, and intention to change. *J Eur CME.* 2020;9:1834759.

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