

BACKGROUND

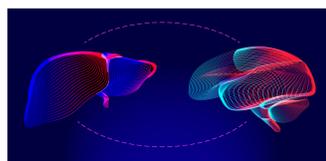
- Hepatic encephalopathy (HE) is a common, disruptive, and oftentimes challenging to manage complication in patients with liver disease and cirrhosis.
- Patients with HE are often reliant on their providers and caregivers for added support and supervision of their care.
- There are a wide variety of online resources on the etiology, risk factors, diagnosis, and management of HE for patients and their caregivers to access.
- However, there is a paucity of knowledge on the quality and content of information related to HE, particularly with respect to treatment and management.

STUDY AIM

- This study sought to analyze the quality and content of online information related to hepatic encephalopathy treatment.

METHODS

- Google search engine was used to query “hepatic encephalopathy treatment” to access the first 100 websites.
- Websites that were non-accessible, duplicates, videos without transcripts, or related to HE in animals were excluded.
- Websites were categorized as academic/professional, informational, personal/blog, or commercial.
- Discussion of pertinent topics related to HE was reviewed. Topics included HE symptoms, etiology, risk factors/triggers, stages of HE, decompensated cirrhosis, diagnosis, prevention, treatment/medications, diet/supplements, and caregiver information.
- Discussion of shared decision making and quality of life was noted.
- Statistical analysis was performed using two-tailed Fisher exact testing with significance set at $p < 0.05$.



RESULTS

Figure 1: Discussion Topics on Hepatic Encephalopathy Treatment

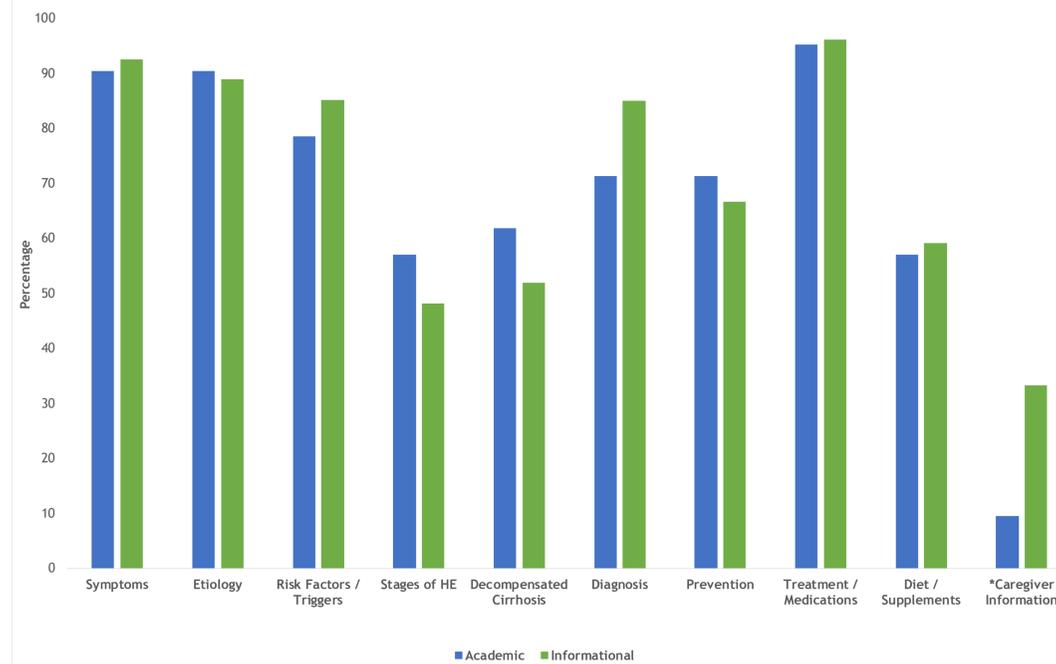


Figure 1: Bar graph plot demonstrating discussion topics pertinent to HE treatment. Only caregiver information was significantly different between website categories and was more represented in informational websites (* denotes a statistically significant difference).

Table 1: Discussion Topics on Hepatic Encephalopathy Treatment

Website Category	Academic	Informational	All
Total Number	42	27	70
Symptoms (%)	38 (90.5%)	25 (92.6%)	64 (91.4%)
Etiology (%)	38 (90.5%)	24 (88.9%)	63 (90.0%)
Risk Factors / Triggers (%)	33 (78.6%)	23 (85.2%)	57 (81.4%)
Stages of HE (%)	24 (57.1%)	13 (48.1%)	38 (54.3%)
Decompensated Cirrhosis (%)	26 (61.9%)	14 (51.9%)	40 (57.1%)
Diagnosis (%)	30 (71.4%)	23 (85.2%)	53 (75.7%)
Prevention (%)	30 (71.4%)	18 (66.7%)	49 (70.0%)
Treatment / Medications (%)	40 (95.2%)	26 (96.3%)	67 (95.7%)
Diet / Supplements (%)	24 (57.1%)	16 (59.3%)	40 (57.1%)
Caregiver Information (%)	4 (9.5%)	9 (33.3%)	13 (18.6%)

Table 1: Discussion topics pertinent to hepatic encephalopathy treatment, comparing websites based on category (academic, informational, or all websites). The number and percent of articles that discussed the above topics are recorded above.

RESULTS

- Seventy of 100 websites met the inclusion criteria.
- 42 (48.3%) were academic resources, 27 (38.6%) were informational, and 1 (1.4%) was commercial. There were no personal/blog websites.
- HE symptoms were discussed in 64 (91.4%) websites, etiology in 63 (90.0%), risk factors/triggers in 57 (81.4%), stages of HE in 38 (54.3%), decompensated cirrhosis in 40 (57.1%), diagnosis in 53 (75.7%), prevention in 49 (70.0%), treatment/medications in 67 (95.7%), diet/supplements in 40 (57.1%), and caregiver information in 13 (18.6%).
- Information for caregivers was discussed significantly more in informational websites than academic (33.3% vs 9.5%, $p = 0.025$).
- There were no significant differences in discussion of other HE topics.
- Shared decision making was discussed in 16 (18.6%) websites, with significantly more discussion among informational resources (40.7% vs 11.9%, $p = 0.008$).
- Quality of life was noted in 28 (40.0%) websites with no significant difference between categories ($p = 0.81$).

DISCUSSION

- Both academic and informational websites cover topics pertinent to HE but only one-fifth of resources, mostly informational websites, discussed resources for caregivers.
- Patients with HE are often reliant on others for their care and a lack of caregiver resources could lead to worse health outcomes and quality of life for patients with liver disease.
- Including specific guidance and support for caregivers online can promote their ability to provide for their loved ones with HE and improve both patient and caregiver quality of life.
- Few articles stressed the importance of the patient-provider relationship and shared decision making, which are important factors in HE management and tailoring a coordinated treatment plan.
- Overall, online resources for HE treatment must be comprehensive but would benefit from being inclusive of caregivers and encourage discussion with medical providers.