mo1021

Persistence of Cognitive Impairment After Resolution of Overt Hepatic Encephalopathy

Yogesh K. Chawla, Sripradhan Umapathy, Sandeep Grover, Ajay Duseja, Radha K. Dhaman

Background & Aims: Hepatic encephalopathy (HE) represents a spectrum of neurocognitive impairments seen in cirrhosis and is considered to be fully reversible with treatment; however, recent evidence suggests otherwise. This longitudinal study was carried out to evaluate the persistence of cognitive impairment in cirrhotics with prior overt HE (OHE) episode despite treatment. Methods: Of 213 patients screened, 107 patients who met the eligibility criteria were enrolled and 102 patients rated as completed the study (52 patients with prior OHE episode and 50 patients with prior OHE). Among 102 patients included in the study, 86 were men and 16 were women; 67 (85.7%) patients had alcoholic etiology and 35 (34.5%) had non-alcoholic etiology (hepatitis B virus - 6 patients, hepatitis C virus - 4 patients, cryptogenic - 14 patients, miscellaneous - 11 patients). All patients underwent psychometric hepatic encephalopathy score (PHES) evaluation at 3 separate visits (Day 1, Day 3 and between 30 and 60 days, median 34). PHES ≤5 was considered abnormal and diagnostic of minimal HE (MHE). One point improvement in PHES between first and second evaluations was considered as a measure of learning. Results: Thirty-four (33.3%) of patients with cirrhosis of liver had MHE, 20 (40%) with prior episode and 14 (26.9%) without prior episode of OHE had MHE. Patients with previous OHE episode showed learning improvement in PHES on repletion on 3rd day [Day 1, mean ±3.70 (95% confidence intervals -4.71 to -2.68) versus Day 3, 1.02 (±5.06 to -2.97); P = 0.084] as compared to patients without prior OHE episode [Day 1, 2.26 (-3.13 to -1.40) versus Day 3, 0.44 (-1.24 to 0.35); P = 0.0001] irrespective of having MHE or not. In this study, 57 patients were learners, i.e., 1-point improvement in PHES (35.8%) and 45 patients were non-learners (44.2%). Univariate analysis demonstrated that Child-Turcotte-Pugh score, lactulose and/or rifaximin therapy, presence of MHE and previous OHE episode were associated with learning impairment. Multivariate analysis demonstrated that only presence of previous episode of OHE (adjusted odds ratio [95% confidence interval], 38.98, 9.192 to 160.4; p < 0.0001) significantly affected learning. Conclusion: This study conclusively demonstrated learning impairment in cirrhotic patients with previous episode of OHE despite normal mental status. Improvement in PHES on repletion can be used as a measure of learning in future studies. Keywords: Hepatic encephalopathy, learning impairment, psychometric hepatic encephalopathy score, cognition.

Mo1022

Effect of Body Mass Index (BMI) on Functional Status of Patients with Cirrhosis Based on the Six-Minute Walk Test (6mwt)

Jeffrey Juneau, Sudha Kodali, Talha A. Malik, Brendan M. McGuire, Winnie C. Tsai, Daniel B. Booth

Background: Published data suggest a link between cirrhosis severity and functional status of patients. Specifically, patients with a lower BMI are reported to have a worse functional status compared to patients with a higher BMI. Therefore, a shorter distance walked over 6 min in 2 previous studies. In this current study, we aimed to test whether BMI is associated with worse functional status. Methods: We designed a cross-sectional study for collecting patient data from a sample obtained at UAB Cirrhosis Clinic. The patients were seen once in clinic over a 6 month period in 2013. Eligible patients were 19-70 years old, diagnosed with cirrhosis, able to walk 1 city block and w/o co-morbidities that would compromise walking ability. All patients included in the study were 107 and 105 patients with MELD score≤20 were enrolled. The BMI was associated with approximately 0.08 higher post-walk Borg score and this was statistically significant (t=2.67 P=0.001). The results of multiple linear regression analysis examining the association between BMI (adjusted as above) and post-walk Borg score demonstrated that this overall model was statistically significant based on the omnibus global hypothesis (F=2.07 P=0.005). However, looking at the independent effect of BMI, it was noted every 1u increase in BMI was associated with approximately 0.08 higher post-walk Borg score and this was statistically significant (t=1.99 P=0.049). Finally, the results of multiple linear regression analysis examining the association between BMI (adjusted as above) and distance walked in 6 min demonstrated that this overall model was statistically significant based on the omnibus global hypothesis (F=6.33 P<0.001). Looking at the independent effect of BMI, it was noted that every 0.5 increase in BMI was associated with approximately 3.28 less meters walked in 6 min and this was statistically significant (t=3.28 P=0.013). Conclusion: Patients with higher BMI did significantly worse in tasks related to functional status among patients with cirrhosis. Participants with higher BMI demonstrated more dyspnea, both at baseline and after walking for 6 min. Also, distance walked over 6 min was inversely proportional to BMI.

Mo1023

15 Days of Treatment With Rifaximin Improves Cerebral Blood Flow At Transcranial Doppler and Psychometric Tests in Cirrhotic Patients With Minimal Hepatic Encephalopathy

Gianluigi Caraccio, Maria Assunta Zocco, Brigida E. Ammicchiandre, Andrea Lupascu, Matteo Gavrichov, Maria Elena Aimora, Davide Roccarima, Francesca Romana Forzani, Mariachiara Campanale, Daniele Ferretase, Massimo Siciliano, Paolo Tonidi, Antonio Gasbarrini

Background: Minimal hepatic encephalopathy (MHE) includes cognitive deficits such as alterations of psychomotor speed and executive functions, detectable in cirrhotic patients only by psychometric or electrophysiological methods. A long term treatment with rifaximin improves psychometric tests, quality of life and driving ability in these patients. Cerebral blood flow seems to be decreased in cirrhosis and cerebral vascular resistance indices (resistive index RI and pulsatility index PI) are closely correlated with severity of cirrhosis, hepatic encephalopathy and ascites. The aim: To evaluate the effect of rifaximin on psychometric tests, cerebral hemodynamic parameters and ammonia in cirrhotic MHE patients. Methods: Sixteen cirrhotic patients (10 male and 6 female) that resulted positive to at least one of the three psychometric tests performed in our Unit (TMT A, TMT B and DST) were enrolled in this study. All the patients enrolled were treated with rifaximin 1200 mg/die per os for 15 days. Transcranial Doppler (TCD) with measurement of RI and PI of both mean and posterior right cerebral arteries (MCA, PCA respectively), psychometric tests and blood ammonia levels measurement were performed at baseline and after 15 days of treatment. Results: All patients reported no side effects. The short treatment with rifaximin was associated with a significant improvement of psychometric tests TMT-B (mean±SD, 11.17±4 vs 12.12±7 seconds, p=0.05) and DST (mean±SD, 31.12±2 vs 27.9±9 seconds, p=0.05) Among TCD parameters, we found a significant reduction of PCA-RI (mean±SD, 0.57±0.08 vs 0.61±0.07, p=0.05) and a trend toward reduction of PCA-PI (p=0.06). Blood ammonia levels reduced after treatment but differences were not statistically significant. Conclusions: A short term treatment with rifaximin could be effective in improving psychometric tests and cerebral hemodynamic parameters in patients with MHE. Since the cerebral vascular resistance may reflect functional reversible changes rather than anatomical irreversible damage. We can hypothesize that rifaximin and in particular its effects on intestinal microflora could be associated with a reduced production of toxins with consequent improvement of cerebral metabolism.

Mo1024

Baclofen Is Safe and Efficacious for Treatment of Muscle Cramps in Patients With Cirrhosis: A Pilot Study

Zachary Henry, Patrick G. Northup

Background: Multiple studies have shown a significantly decreased health-related quality of life in patients with cirrhosis. In cirrhotic patients, muscle cramps were shown to be the most influential factor on their overall quality of life. We decided to test whether the safety and efficacy of Baclofen for the treatment of muscle cramps in patients with cirrhosis. Methods: Patients with cirrhosis and a complaint of muscle cramps were identified in our general and transplanted hepatology clinics. They underwent baseline history and physical, the SF-12 quality of life questionnaire, and a muscle cramp survey for data on location, frequency, and severity of muscle cramps. Patients were then started on Baclofen 5 mg TIID for one week, increased to 10 mg TIID for the next 3 weeks, and then tapered off over a 7 day period. Safety assessments were done weekly by phone interview until the end of the treatment period. Efficacy assessments were made by repeating the muscle cramp survey at the end of treatment and after a two week washout period. The SF-12 quality of life questionnaire was repeated at the end of the 4 week treatment period. Results: We enrolled 10 patients with cirrhosis and muscle cramps. One of ten (10%) patients had to discontinue Baclofen due to higher MELD score, but another one (10%) of patients missed the whole treatment period. It was noted in this patient Another patient had to decrease the dosage of Baclofen to 5 mg TIID after the second week due to complaints of dizziness, but tolerated the lower dose without any side effects. Rates of headache, dizziness and nausea were not significantly different during treatment and baseline. After stopping treatment (p=0.083, p=0.157, p=0.10, respectively). Patients noted a significant decrease in muscle cramp frequency from a pre-treatment mean of 5.5 days per week to an end of treatment mean of 1.4 days per week (p=0.007). Patients also noted a significant decrease in severity of muscle cramps with a pre-treatment mean of 8.5/10 and an end of treatment mean score of 2.7/3.0 (p=0.001). At the end of the two week washout period the mean severity had significantly increased back to 7.1/ 10 (p=0.037). Over the 4 week treatment period there was no significant change in the physical or mental scores of the SF-12 (p=0.083 and p=0.703, respectively). Conclusions: This trial demonstrated significant differences in muscle cramp frequency compared to their baseline or compared to previously reported rates of side effects for Baclofen. Despite the small sample size we found a significant improvement in both the frequency and severity of muscle cramps. Baclofen appears to be both safe and efficacious for the treatment of muscle cramps in patients with cirrhosis. The next step will be to perform a randomized, placebo controlled trial to confirm these results.