Do Serotonin Levels Predict Fatigue in Patients with Chronic Liver Disease?

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Introduction

- Patients with chronic liver disease (CLD) often report fatigue as a main symptom that affects their functionality
- It can interfere with daily routines such as school, work, social events, or household activities and is very distressing
- Low serum serotonin levels have been shown to directly correlate with greater fatigue in other conditions
- A similar correlation in patients with CLD was expected

Purpose

- The purpose is to determine the correlation between serum serotonin levels and self-reported indicators of fatigue
- A correlation between serum serotonin levels and fatigue could suggest that altering serum serotonin levels may reduce fatigue in patients with chronic liver disease

Methods

- Data on 31 patients with CLD taken at baseline and one year follow-up visits were used in this analysis
- Serum Serotonin levels measured at baseline were compared to Fatigue Severity Scale (FSS) scores measured at baseline and at 1 year follow up
- Missing FSS scores (n=10) were imputed using the average FSS score from the sample (4.0)
- Spearman’s rho was calculated to determine if there was a correlation between the variables and then P-values were determined

Results

- There was a negative correlation between serum serotonin levels and baseline fatigue (Graph 1) with a P-value of 0.075 (Table 1)
- There was a negative correlation between baseline serum serotonin levels and the follow up fatigue (Graph 2) with a P-value of 0.230 (Table 1)

Discussion

- There was no statistically significant correlation between serum serotonin levels and self-reported fatigue in patients with chronic liver disease
- The baseline association approached significance level; the follow up data was weaker and showed less significance
- However, the consistent negative correlation for baseline and 1 year follow up is in keeping with the hypothesis, indicating that lower levels of serum serotonin correlate with higher fatigue
- Limitations of the study include a small sample size and lack of complete data, which led to imputation

Conclusion

- These results indicate a trend that supports the hypothesis
- Further research with a larger sample size could provide more statistically significant results indicating serotonin levels predict fatigue in patients with CLD

References: