"Improving Provider Adherence to Nutritional and Metabolic Recommendations in Patients with Acute Alcoholic Hepatitis: A Quality Improvement Initiative"

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ABSTRACT

Macro- and micronutrient malnutrition is a common feature in alcoholic hepatitis. Decreased oral intake, decreased gut absorption and a hypermetabolic state perpetuate nutritional deficiencies in alcoholic hepatitis. Low nutritional intake, less than 21.5 kcal/kg/day, was associated with worse outcomes in severe alcoholic hepatitis. Current guidelines generally recommend daily protein intake of 1.2–1.5 g/kg/day and caloric intake of 30- 40 kcal/kg/day in alcoholic hepatitis patients. This quality improvement project was designed to help improve adherence to nutritional recommendations in patients with alcoholic hepatitis.

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INTRODUCTION

Alcoholic hepatitis (AH) is an acute, inflammatory liver disease associated with high morbidity and mortality, both short and long term. Efficacious medical treatments for alcoholic hepatitis are lacking, however, current medical therapy for severe alcoholic hepatitis relies on corticosteroids, alcohol abstinence and optimization of nutritional status. Preliminary and Preclinical studies include use of Antibiotics, IL-1 inhibitors, GCSF and antioxidants. Malnutrition and sarcopenia are common among hospitalized patients with AH. Sarcopenia negatively impacts outcome.[1] Current guidelines recommend daily protein intake of 1.2–1.5 g/kg/day and caloric intake of 30- 40 kcal/kg/day in AH patients. [2][3]. Our objective is to implement methods to facilitate adherence to nutritional recommendations in hospitalized patients with AH through a best practice alert (BPA).

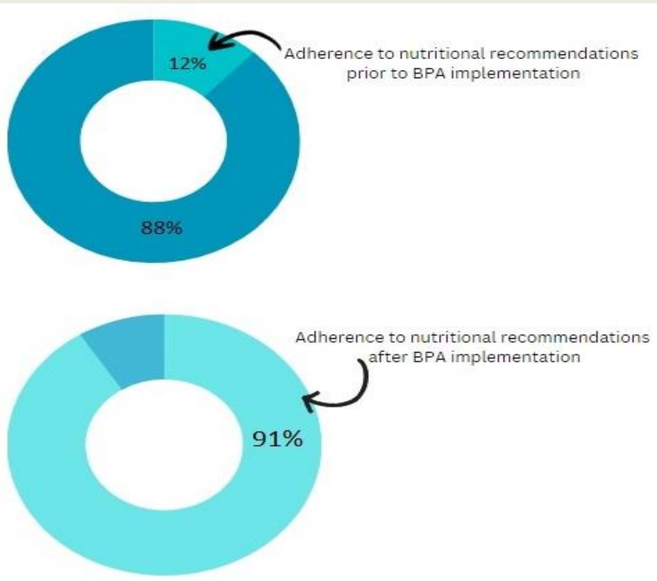
METHODS

We conducted a 12-month retrospective study followed by a 3-month prospective interventional study at Presbyterian Medical Center in New Mexico. Chart review was performed to evaluate adherence with nutritional recommendations in patients with AH. A 3-month intervention was performed to improve compliance. This included the creation of a customized best practice advisory alert (BPA) in the Electronic medical record (EMR) and two educational sessions. The BPA triggers included elevated ALT/AST, bilirubin >3 and documented alcohol use within 8 weeks. Alert encouraged physicians to request a nutrition consult if the diagnosis of AH was appropriate.

RESULTS

105 patients with 82 in the pre- and 23 post-intervention periods were reviewed. No significant difference noted in patient characteristics and demographics between the 2 groups. The intervention implemented revealed a 79% increase in adherence to nutritional recommendation ($P < 0.023$). Adherence was quantified as modified diet orders in EMR to include high protein diet (minimum of 60 grams/daily) and/or addition of supplemental high protein milk shakes to meals and/or electronic consult to nutritionist.

Patients Characteristics			
Category	Sub-category	Retrospective analysis	Prospective analysis
Age (Mean)		35.8	30.4
Gender	Male	61%	53%
	Female	39%	47%
Race	White	31%	29%
	African American	0%	1%
	Hispanic	39%	49%
	Asian	0%	1%
	Native American	25%	19%
	Unknown	4.8%	1%
Discriminant Function on admission (Mean)		24.7	29.1



DISCUSSION

AH has high morbidity and mortality. Current pharmacological options remain limited. Patients with AH are commonly malnourished and sarcopenic. Combined System based auto-generated EMR alerts and educational sessions help increase compliance with the nutritional recommendations as well as enforce evidence-based practices in this select patient population.

CONCLUSIONS

- NEED: improved compliance with performance measures.
- CREATED: novel alert in EMR to proactively identify patients who may have AH.
- WHY: an electronic reminder to physicians to consider nutritional optimization.
- NEXT STEPS: 1) a subsequent retrospective study to quantify changes in outcomes 2) integrated hyperlink within the BPA to facilitate placement of orders.

REFERENCES

[1] Mendenhall C, Roselle GA, Gartside P *et al*. Relationship of protein calorie malnutrition to alcoholic liver disease: a reexamination of data from two Veterans Administration Cooperative Studies. Alcohol Clin Exp Res 1995;19:635-641.

[2] Plauth M, Bernal W, Dasarathy S, Merli M, Plank LD, Schütz T, Bischoff SC. ESPEN guideline on clinical nutrition in liver disease. Clin Nutr. 2019 Apr;38(2):485-521. doi: 10.1016/j.clnu.2018.12.022. Epub 2019 Jan 16. PMID: 30712783; PMCID: PMC6686849.

[3] Singal AK, Bataller R, Ahn J, Kamath PS, Shah VH. ACG Clinical Guideline: Alcoholic Liver Disease. Am J Gastroenterol. 2018 Feb;113(2):175-194. doi: 10.1038/ajg.2017.469. Epub 2018 Jan 16. PMID: 29336434; PMCID: PMC6524956.