

## ***Omega-3-Enriched Lipid Emulsion for Liver Salvage in Parenteral Nutrition-Induced Cholestasis in the Adult Patient***

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*Journal of Enteral and Parenteral Nutrition: May 2011 vol. 35 no. 3 386-390*

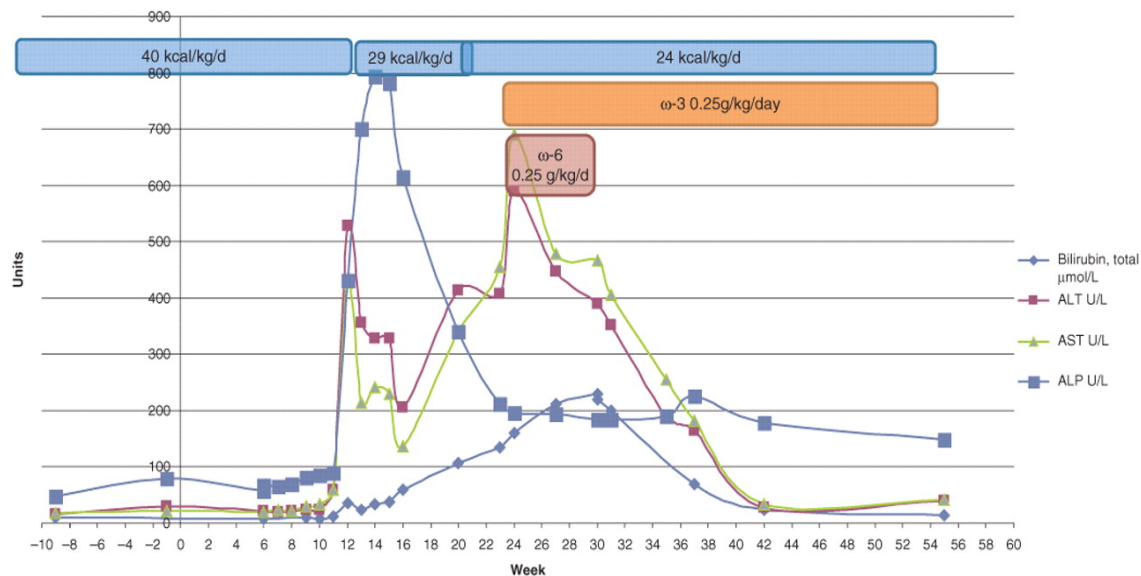
### Summary

This article discusses the first case report of adult cholestatic PN-associated Liver disease that failed conventional treatment and was reversed by the administration of  $\omega$ -3-enriched fatty acids in the PN mixture. The patient is a 75 year old female with short gut syndrome resulting from massive small bowel resection related to adhesions from a hernia repair and a secondary small bowel resection due to an enterocutaneous fistula. The patient was left with only 12 cm of proximal jejunum attached to the ascending colon. The pt did not tolerate an oral diet (low-fat/no insoluble fiber) or enteral feedings using an elemental formula in combination with medications to control diarrhea.

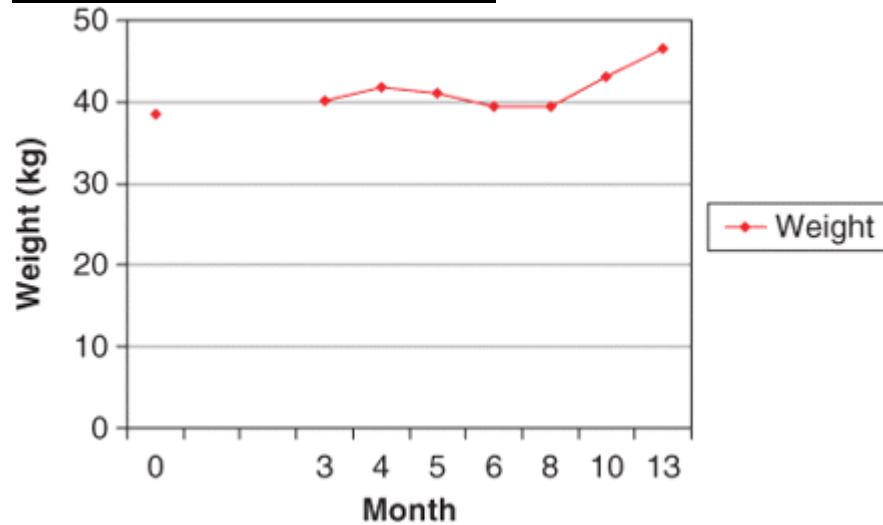
She was discharged home on cycled PN. After one month, the patient's lab work showed elevated AST, ALT, and ALP. After 110 days, the pt was severely jaundiced. A liver biopsy showed heavy lobular and portal cholestasis. After failing treatment with medication (due to severe nausea), Omegaven was added to the PN mixture and eventually replaced all of the intralipid. After 16 weeks of using  $\omega$ -3-enriched lipids in the PN mixture, the patient's total bilirubin returned to normal and the liver and spleen were reduced in size. At 5 months, a second biopsy showed improvement, including complete resolution of the intrahepatic cholestasis.

### Major Results of Authors

Figure 1. Timeline of biochemical changes and clinical management



**Figure 2. Weight changes over time**



Conclusions

This case report shows the use of  $\omega$ -3-enriched fatty acids in PN mixtures can reverse the PN associated liver disease in adults and supports previous findings in the pediatric population. Weight gain was also achieved when the patient was changed to the  $\omega$ -3-enriched fatty acids even though total caloric intake was lower compared to the original PN mixture.

Take Home Message

Research continues to show the benefits of  $\omega$ -3-enriched fatty acids for both pediatric and adult populations. Although it is not available for day to day use, consideration should be given to investigating how to enroll patients into the compassionate lipid program.