

## Issue 78

### In a nutshell

There is potential for gain by including glutamine in nutrition support of seriously ill patients, whether by parenteral or enteral route.

It also seems to be a reasonably safe measure.

## Glutamine in the seriously ill

Arbor Clinical Nutrition Updates 1999 (Nov.);78:1-2  
ISSN 1446-5450

### ARCHIVES

The full list of archived issues can be found at [www.arborcom.com/archives/](http://www.arborcom.com/archives/)  
Some issues of our translated language editions are also available in archive, for Spanish, Portuguese and French.

### COPYRIGHT, disclaimer and terms of use

This copy from our archives is for your private use only, and is NOT to be forwarded to any other party. Your use of these Updates constitutes your agreement to our disclaimer and terms of use: see section at the end of this publication.

## NUTRITION RESEARCH REVIEW

### Study one: Parenteral nutrition

There was some limited benefit to overall outcome in surgical patients given glutamine as part of the parenteral feed, according to recent English research.

**Subjects:** 168 patients given parenteral nutrition for various clinical reasons (surgical and medical).

**Method:** A randomised double-blind controlled trial in which patients were given either glutamine (20g) or standard feeds for a mean of 8 feeds.

**Results:** There was no significant difference between the two groups in infective complications, or overall median length of stay.

However, there was a significant reduction in length of stay in the sub-group of surgical patients given glutamine (45 days vs 30 days with placebo,  $p < 0.03$ )

Ref: Powell-Tuck J et al. A double blind, randomised, controlled trial of glutamine supplementation in parenteral nutrition. *Gut* 1999;45:82-8

### Study two: Enteral feeding

Another recent study from America found some benefit from giving glutamine as part of enteral nutrition support to critically ill patients, by looking at the financial measurement of patient outcomes.

**Subjects:** 50 critically ill (APACHE II score  $> 11$ ) patients requiring and able to take enteral nutrition support.

**Method:** Randomised, double-blind treatment trial.

**Results:** There was no significant difference between active and control treatments in regard to mortality, but there was a significant lowering of total cost of ICU/hospital patient costs in those given glutamine feeds (\$23,000 vs \$30,900 in controls,  $p = 0.0036$ ).

Ref: Jones C et al. Randomized clinical outcome study of critically ill patients given glutamine-supplemented enteral nutrition. *Nutrition* 1999 Feb;15(2):108-15

### Study three: Infection in multiple trauma patients

A Dutch study found both statistical and clinically significant benefit from giving glutamine as part of enteral nutrition support in patients with severe multiple trauma.

**Subjects:** 60 patients with severe multiple trauma.

**Method:** Randomised to receive either glutamine or isonitrogenous, isocaloric control feed for at least 5 days.

**Results:** The glutamine-supplemented patients had significantly less pneumonia (17% vs 45%,  $p < 0.02$ ), bacteraemia (7% vs 42%,  $p < 0.005$ ) and sepsis (3% vs 26%,  $p < 0.02$ ).

Ref: Houdijk AP et al. Randomised trial of glutamine-enriched enteral nutrition on infectious morbidity in patients with multiple trauma. *The Lancet* 1998;352:772-6

## Comments

What these three studies have in common is that they have all included seriously ill surgical patients, but not restricted to total parenteral nutrition.

Overall, there is a clear benefit. However, as we saw in our previous two issues, it has proved difficult to identify a consistent set of positive outcome measures across the various studies. Even so, the dollar comparison in study two does probably tell us something of clinical significance as well as financial, and the results of the third study summarised above are quite impressive.

We have not had room to cover all the clinical research on glutamine supplementation that has been published in the last 24 months. These included studies on the impact of glutamine supplementation on lymphocyte function, levels of inflammation, nitrogen balance and abnormal intestinal permeability as seen in patients with AIDS and Crohn's disease. Again, the results have been generally - but not consistently - positive. For example, the two permeability studies failed to show statistically significant improvement.

Taken overall, it seems clear that there is potential for gain by including glutamine in nutrition support of seriously ill patients, whether by parenteral or enteral route. It also seems to be a reasonably safe measure (despite some question being raised as to whether glutamine could perhaps stimulate the growth of some tumors).

For the practising clinician, there are still quite a few questions that need to be answered, however. These include:

1. Are the benefits of glutamine mainly related to correcting a patient's malnutrition, or does glutamine act as a pharmacological agent as well?
2. How can the clinician predict what sort of benefit is likely in which patients?
3. Will there be benefits from giving glutamine to less severely ill patients?

We await the answers to these questions with considerable interest.

## Disclaimer, copyright and terms of use

Your use of these Updates constitutes your agreement to our disclaimer and terms of use which can be found on our web site at: <http://arborcom.com/disclaim3.htm>. You can also obtain the disclaimer and terms of use by emailing us at: [upD@arborcom.com](mailto:upD@arborcom.com).

© Copyright Arbor Communications PTL 1999. All rights reserved. This publication may NOT be forwarded onto others without our written permission.

If you want to receive the Clinical Nutrition Updates on an ongoing basis, please send us a request email to [upD@arborcom.com](mailto:upD@arborcom.com). This is a FREE service to health professionals and students. Include details of your name, email address, which country you live in, institution you are associated with (if relevant) and professional background. The Updates are available in English, Spanish, Portuguese, Italian, French, Korean and Russian