Studien: Ernährung des Intensivpatienten

REDOX trial

A Randomized Trial of Glutamine and Antioxidants in Critically Ill Patients

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A randomized trial of glutamine and antioxidants in critically ill patients

Heyland D. et al.  

**Probability of survival** for patients receiving [*glutamine*](https://www.nationalcenterforbiotechnologyinformation.gov/ncbi) or no glutamine (P=0.02) (REducing Deaths due to OXidative Stress (REDOXS) study) (i.v. 0.35 g GLN/kg IBW /d (= 0.5 g/kg IBW/d ALA-GLN) + enteral 30 g GLN/d (= 42.4 g ALA-GLN/d))
### A randomized trial of glutamine and antioxidants in critically ill patients

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<table>
<thead>
<tr>
<th>Clinical Outcomes</th>
<th>Glutamin (%)</th>
<th>No Glutamine (%)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Death at day 28</td>
<td>32.4</td>
<td>27.2</td>
<td>0.05</td>
</tr>
<tr>
<td>Death in hospital</td>
<td>25.7</td>
<td>21.3</td>
<td>0.02</td>
</tr>
<tr>
<td>Death at 6 months</td>
<td>37.2</td>
<td>31.0</td>
<td>0.02</td>
</tr>
<tr>
<td>Time from randomization to</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- discharge from hosp. (d)</td>
<td>51.0</td>
<td>40.1</td>
<td>0.04</td>
</tr>
<tr>
<td>- discharge from ICU (d)</td>
<td>17.1</td>
<td>13.1</td>
<td>0.03</td>
</tr>
<tr>
<td>- discontinuation mech vent (d)</td>
<td>11.0</td>
<td>8.7</td>
<td>0.03</td>
</tr>
<tr>
<td>ICU - LOS (d)</td>
<td>8.4</td>
<td>8.9</td>
<td>0.62</td>
</tr>
<tr>
<td>Hospital LOS (d)</td>
<td>16.0</td>
<td>17.1</td>
<td>0.15</td>
</tr>
</tbody>
</table>
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Plasma levels of glutamine in the sub-study patients.

**REDOXS - Study**
A randomized trial of glutamine and antioxidants in critically ill patients


Prespecified Subgroup Analyses of Death at 28 Days, According to Study Group

REducing Deaths due to OXidative Stress (REDOXS) study

i.v. 0.35 g GLN/kg IBW/d (= 0.5 g/kg IBW/d ALA-GLN)

Enteral 30 g GLN/d (= 42.4 g ALA-GLN/d)
Ist die Glutamin obsolet?

einige Probleme der REDOXS-Studie.....

- **Phamakonutrition und nicht Ernährung**
  Unterschied zu allen früheren Studien

- **Patientenselektion:**
  hoher Prozentsatz der Patienten im Schock
  35% der Patienten im Nierenversagen

- **signifikante Unterschiede zwischen Gruppen**
  mehr Organversagen unter Glutamin

- **Krasse Überdosierung**
  0.35 g/kg/Tag i.v. und 30 g enteral

- **rascher Zufuhrbeginn am 1 Tag**
  auch ohne Ernährung!

- **Ernährungsziel nur bei wenigen Patienten erreicht**

- **viele Patienten hatten keinen Glutamin-Mangel**
Scandinavian glutamine trial: a pragmatic multi-centre randomised clinical trial of intensive care unit patients

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Scandinavian glutamine trial: a pragmatic multi-centre randomised clinical trial of intensive care unit patients


Kaplan–Meier curves depicting ICU-mortality in patients randomised to daily i.v. glutamine or placebo

(A) Patients treated per protocol (>3 days)(n=139+145), p=0.046

(B) Intention-to-treat patients,(n=205+208), p=0.098
Randomised trial of glutamine, selenium, or both, to supplement parenteral nutrition for critically ill patients

Peter J D Andrews, professor of critical care, consultant,\(^1\)\(^2\) Alison Avenell, clinical senior lecturer,\(^3\) David W Noble, consultant,\(^4\) Marion K Campbell, director,\(^5\) Bernard L Croal, consultant,\(^5\) William G Simpson, consultant,\(^5\) Luke D Vale, professor of health technology assessment,\(^3\)\(^6\) Claire G Battison, trial manager,\(^1\) David J Jenkinson, research fellow in medical statistics,\(^3\) Jonathan A Cook, methodologist\(^3\) and the SiGNET (Scottish Intensive care Glutamine or selenium Evaluative Trial) Trials Group

**ABSTRACT**

**Objective** To determine whether inclusion of glutamine, selenium, or both in a standard isonitrogenous, isocaloric preparation of parenteral nutrition influenced new infections and mortality among critically ill patients.

**Trial registration** Current Controlled Trials ISRCTN87144826

Andrews PJD. et al.  *BMJ* 2013; 342: d1542
Randomised trial of glutamine, selenium, or both, to supplement parenteral nutrition for critically ill patients (SIGNET)

Andrews DJ et al.  
*BMJ* 2011; 342: d1542

Kaplan-Meier survival plot over six months after randomisation among 502 intensive care patients randomised to trial parenteral nutrition formulations (20.2 g GLN/d, 500 µg Se/d)
Infants remaining free from sepsis during TPN either with glutamine or without (control), after adjusting for co-variables. During TPN (before the first enteral feed), glutamine was associated with a significantly decreased risk of developing sepsis (HR 0.33 -0.15 to 0.72; P = 0.005).
A systematic literature review and meta-analysis of randomized clinical trials of parenteral glutamine supplementation


Forest plot of effect of glutamine supplementation on short-term mortality; RR, relative risk.