Protein-enriched bread and drinking yoghurt and their effect on protein intake in acutely hospitalized older adults: a randomized controlled trial

Rationale
Earlier studies have shown that protein intake in elderly is often insufficient during hospitalization. The objective of this study was to examine the effect on protein intake of acutely hospitalized elderly of consuming a protein-enriched bread and drinking yoghurt, replacing normal products.

Methods
This study was performed as a single blind randomized controlled trial in elderly (≥ 55 years), acutely admitted to the hospital. During 3 consecutive days participants received either ad libitum protein-enriched bread (7 g of protein) and drinking yoghurt (20 g of protein) in the intervention group or isocaloric, non-enriched bread (4 g of protein) and drinking yoghurt (8 g of protein) in the control group as part of their daily meals. Food intake of the participants was measured and nutritional values were calculated according to the Dutch Food Composition Table. An independent samples t-test was used to compare protein intake between intervention and control group.

Results
The use of enriched products resulted in a significantly increased protein intake. Bread and drinking yoghurt contributed almost equally to the increased intake of protein in the intervention group.

<table>
<thead>
<tr>
<th></th>
<th>Control group (n=25)</th>
<th>Intervention group (n=22)</th>
<th>P -value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein intake (g)</td>
<td>58 ± 15</td>
<td>75 ± 33</td>
<td>0.039</td>
</tr>
<tr>
<td>Protein intake (g/kg/day)</td>
<td>0.9 ± 0.3</td>
<td>1.1 ± 0.5</td>
<td>0.041</td>
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<tr>
<td>Protein requirement* (%))</td>
<td>8%</td>
<td>36%</td>
<td>0.030</td>
</tr>
</tbody>
</table>

Data are presented as mean ± SD, unless stated otherwise.
* Percentage of patients reaching the minimum protein requirement of 1.2 g/kg/day

Conclusion
The use of protein-enriched bread and drinking yoghurt, consumed as part of regular meals, is a promising and feasible solution to increase the protein intake of acutely ill elderly. It needs to be confirmed whether a longer-term use of these products in larger groups of patients will also result in better clinical outcomes.

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