Tailored Nutritional Guidance Has Positive Effect On Energy And Protein Intake Of Geriatric Patients After Discharge: RCT

Jan Verho, MSc (Nutrition)
University of Helsinki
Finland
CONFLICT OF INTEREST DISCLOSURE

I have no potential conflict of interest to report
Introduction

• Malnutrition is common among hospitalized older adults
• Nutritional status may deteriorate during hospital stay
• Recovering from acute disease requires good nutritional status and adequate energy and protein intake
• Home visits with registered dietitians may have a positive effect on the nutritional status of geriatric medical patients after discharge
Aim of the study

- Assess nutritional status, protein and nutrient intake
- Investigate the effectiveness of tailored nutritional care with randomized controlled design
Methods

• 24-week randomized controlled trial
• Independently living older adults discharged from hospital
• Normal cognition
• MNA was used to assess nutritional status
• three-day food diaries collected after discharge and after intervention to assess nutrient intake
• Tailored nutritional guidance included
  – at least one home visit with registered dietitian
  – personalized nutritional care plan
  – written material
  – ONSs when needed
**STUDY FLOW CHART**

1. **RECRUITING from Oulunkylä rehabilitation hospital**
2. **BASELINE measurements (MNA, food diary)**
3. **RANDOMIZATION**
   - **INTERVENTION GROUP**
     - Home visit with dietitian
     - ONS when needed
   - **CONTROL GROUP**
     - Normal care
4. **24 WEEKS**
5. **END measurements**
6. **FOLLOW UP**
Baseline

- 41 (73 % women) participants
- Mean age was 76 years
- According MNA 61 % were at risk for malnutrition
Percent of all participant reaching adequate intake at baseline

- Iron: 37%
- Calcium: 59%
- Folate: 5%
- Vitamin C: 54%
- Fibre: 10%
- Protein: 17%
Protein intake

Controls

Intervention

Baseline Protein intake, g / day

Change in Protein intake, g / day

Baseline Protein intake, g / day

p=0.013
Energy intake

Controls

Intervention

Baseline Energy, kcal / day

Change in Energy, kcal / day

Controls

Intervention

Baseline Energy, kcal / day

Change in Energy, kcal / day

$p=0.025$
# Nutrient intake

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Baseline</th>
<th>Change</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Control Mean (SD)</td>
<td>Intervention Mean (SD)</td>
<td>Control Mean (95% CI)</td>
</tr>
<tr>
<td>Iron (mg)</td>
<td>7.55 (2.97)</td>
<td>8.04 (3.50)</td>
<td>1.07 (-0.65 to 2.93)</td>
</tr>
<tr>
<td>Calcium (mg)</td>
<td>750 (440)</td>
<td>847 (363)</td>
<td>41.4 (-148.62 to 261.70)</td>
</tr>
<tr>
<td>Vitamin C (mg)</td>
<td>197 (485)</td>
<td>101 (95)</td>
<td>-86.3 (-380.11 to 35.13)</td>
</tr>
<tr>
<td>Folate (µg)</td>
<td>271 (327)</td>
<td>183 (112)</td>
<td>-66.6 (-254.45 to 29.45)</td>
</tr>
<tr>
<td>Fiber (g)</td>
<td>14.9 (7.3)</td>
<td>17.3 (8.2)</td>
<td>2.95 (1.07 to 5.14)</td>
</tr>
<tr>
<td>Sucrose (g)</td>
<td>27.2 (15.0)</td>
<td>33.5 (19.3)</td>
<td>-0.1 (-8.05 to 7.49)</td>
</tr>
<tr>
<td>PUFA (g)</td>
<td>9.08 (4.39)</td>
<td>7.57 (3.19)</td>
<td>-0.1 (-1.88 to 1.43)</td>
</tr>
<tr>
<td>MUFA (g)</td>
<td>20.1 (9.3)</td>
<td>14.5 (5.6)</td>
<td>-0.4 (-4.51 to 3.35)</td>
</tr>
<tr>
<td>SAFA (g)</td>
<td>18.9 (9.8)</td>
<td>14.1 (6.1)</td>
<td>0.6 (-2.83 to 4.13)</td>
</tr>
</tbody>
</table>

* Bootstrap type ANCOVA, baseline as covariate.
0.042 (permutation test)
Conclusions

• The risk of malnutrition, poor energy and protein intake are common among geriatric patients after discharge

• Tailored nutritional guidance and use of ONSs improve energy and protein intake
Thank you!