CLINICALLY-ASSISTED NUTRITION IN ADVANCED CANCER

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OVERVIEW

Malnutrition

Guidelines

Evidence

End of life care

Ethics
“More and more patients are going to the Internet for medical advice. To keep my practice going, I changed my name to Dr. Google.”
Nutrition research

- **RCTs**: 13
- Heterogenous
- Different treatments
- Various intents
Clinically-assisted nutrition

- Not a cure
- Supportive
- Reduced treatment delays
- Dependent on tumour, staging, cancer symptoms, side effects, intake

Malnutrition
Cancer associated malnutrition: causes

Psychological effects
Taste changes
Dysphagia
Pain
Malabsorption
Fatigue
Constipation
Medication
Nausea & vomiting
Anorexia
Restricted diets
Surgical interventions
Diarrhoea
Decreased mobility
Metabolic derangements

- Increased resting energy expenditure
- Insulin resistance
- Disordered fat breakdown
- Disordered protein breakdown
- Reduced intake
- Inflammation and catabolism
- Cancer cachexia

Lack of irreversible response
## Cancer related malnutrition: incidence

<table>
<thead>
<tr>
<th>Tumour site</th>
<th>Prevalence of malnutrition as % of total patient cohort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pancreas</td>
<td>80-85</td>
</tr>
<tr>
<td>Stomach</td>
<td>65-85</td>
</tr>
<tr>
<td>Head and neck</td>
<td>65-75</td>
</tr>
<tr>
<td>Oesophagus</td>
<td>60-80</td>
</tr>
<tr>
<td>Lung</td>
<td>45-60</td>
</tr>
<tr>
<td>Colon/rectum</td>
<td>30-60</td>
</tr>
<tr>
<td>Urological</td>
<td>10</td>
</tr>
<tr>
<td>Gynaecological</td>
<td>15</td>
</tr>
</tbody>
</table>

(Stratton et al, 2003)
Cancer related malnutrition: incidence

Cachectic: 76%: >5% weight loss

Median survival = 199 days

24%: < 5% weight loss

Median survival = 299 days

(Fearon et al, 2011, Hug et al, 2016)
- n=100
- NSCLC
- Palliative intent
- Anthropometrics
- Sarcopenia
- QoL

DAIL
Dietetic Assessment and Intervention in Lung Cancer
Cancer associated malnutrition

- Shorter overall survival / increased mortality
- Impaired response
- Reduced quality of life
- Toxicity
- Post-op complications
- Stop / delay treatment
- Chemotherapy dose reductions
ESPEN Guideline

ESPEN guidelines on nutrition in cancer patients

Jann Arends a, Patrick Bachmann b, Vickie Baracos c, Nicole Barthelemy d, Hartmut Bertz a, Federico Bozzetti e, Ken Fearon f,†, Elisabeth Hütterer g, Elizabeth Isenring h, Stein Kaasa i, Zeljko Krznaric j, Barry Laird k, Maria Larsson l, Alessandro Laviano m, Stefan Mühlebach n, Maurizio Muscaritoli m, Line Oldervoll i, o, Paula Ravasco p, Tora Solheim q, r, Florian Strasser s, Marian de van der Schueren t, u, Jean-Charles Preiser v, *
ESPEN Guidelines

Malnutrition

(Prevent)

Strong Recommendations
Low level of evidence

Identify

Treat
Screening

Early

1. BMI
2. weight loss
3. nutritional intake

Fast

Cheap

Sensitive

Identify
Height to weight ratio

Healthy range: 19.5 - 25 kg/m²

Lacks sensitivity

Fluid shifts

Obesity and malnutrition

Lung audit: median BMI 23 kg/m²
Major cause of morbidity and mortality (Andreyev et al, 1998)

Accurate indicator of malnutrition

Identify

Personal recall

Screening tools? MUST vs PG-SGA

Weight loss
Under / over reporting

Fear of delays

Changes during treatment cycles

Nutritional intake
Screening: what works?

- Screening tools
- Weight loss history
- Symptoms & side effects
- At diagnosis & repeat

ASK QUESTIONS
Nutrition Support

Route
- Oral +/- nutritional supplements
- Enteral feeding
- Parenteral nutrition

Meet nutritional needs
- Food fortification
- Texture modification
- Timing of meals

Other
- Treat symptoms and side effects
- Dietary counselling
- Psychological support
‘nutritional intervention to increase oral intake in cancer patients who are able to eat but who are malnourished or at risk of malnutrition. This includes dietary advice, the treatment of symptoms and derangements impairing food intake (nutrition impact symptoms) and offering oral nutritional supplements.’ 

(Arends, 2016)
Evidence

**ONS**

Severe malnutrition only

**Enteral feeding in H&N / OG**

RCTs are unethical
Observational studies
- Reduced weight loss
- Delays in treatment
  - Hospitalisation

**ONS and enteral feeding**

No evidence to improve outcomes
Evidence

Parenteral Nutrition

- Bowel obstruction / peritoneal carcinomatosis
- Expensive
- Risks outweigh benefits
- Prognosis < 2 months: home PN not recommended
- No evidence to improve QoL

- Observational study (Fan, 2007)
  - Malignant GI obstruction, n=115
  - No oral intake, Home PN
  - Median survival: 6.5 months
  - n=11: > 1yr, n=2: > 4 years
## Dietary Counselling: Evidence

<table>
<thead>
<tr>
<th>Author</th>
<th>Number</th>
<th>Patients</th>
<th>Intervention</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uster et al, 2017</td>
<td>RCT: n=58</td>
<td>Lung &amp; GI</td>
<td>DC x 3, PT</td>
<td>Adequate protein, ↓n&amp;v, →QoL</td>
</tr>
<tr>
<td>Uster et al, 2013</td>
<td>RCT: n=58</td>
<td>Mixed</td>
<td>DC</td>
<td>↑protein/kcal, →QoL</td>
</tr>
<tr>
<td>Baldwin et al, 2012</td>
<td>Sys Rv 13 x RCTs: n=1414</td>
<td>Mixed</td>
<td>DC +/--ONS</td>
<td>Mixed. ↑body weight, QoL. →OS</td>
</tr>
<tr>
<td>Poulson et al, 2014</td>
<td>RCT: n=61</td>
<td>Gynae, GI, Oeso</td>
<td>DC vs ad-hoc from NS</td>
<td>Weight loss: 38% vs 72%, →QoL</td>
</tr>
<tr>
<td>Lee et al, 2016</td>
<td>Sys Rv 11 RCTs: n=1017</td>
<td>Mixed</td>
<td>DC, DC &amp; ONS, ONS &amp; EF</td>
<td>DC: ↑protein/kcal, QoL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ONS &amp; EF</td>
<td>ONS &amp; EF: no improvements</td>
</tr>
</tbody>
</table>
Ketogenic diet

- Probiotics for RT diarrhoea (Fibre study)
- Cannabis for taste changes and appetite
- Omega 3 (MENAC)

Fasting

Steroids increase muscle mass

No evidence
Improve quality of life
ESPEN Guideline

ESPEN guideline on ethical aspects of artificial nutrition and hydration

Christiane Druml a, *, Peter E. Ballmer b, Wilfred Druml c, Frank Oehmichen d, Alan Shenkin e, Pierre Singer f, Peter Soeters g, Arved Weimann h, Stephan C. Bischoff i
If the risks and burdens of a given therapy for a specific patient outweigh the potential benefits, then the physician has the obligation of not providing (withholding) the therapy.

Artificial nutrition has become a part of palliative care, e.g. in cancer patients, with the potential to increase survival and quality of life in selected patients. Long term home enteral and parenteral nutrition programs should be considered.

There are no clear criteria to ascertain the beginning of the dying phase. Therefore, a nutritional intervention in this phase of life should be followed in an individualised manner.

Whether a patient removes a feeding tube because the foreign object bothers him or because he wishes to express his refusal of ‘life-preserving’ nutrition must be interpreted according to the patient’s previous statements, values and life decisions.

Quality of life must always be taken into account in any type of medical treatment including artificial nutrition.
Cancer is not just physical

Psychological effects

Emotional responses

Reduced food intake is about MORE than just malnutrition
- Loss of control
- Change in appearance
- Pressure from family/friends
- Depression, anxiety
- Conflict
- Social isolation
- Frailty
- Poor quality of life

Loss of appetite
Food is HOPE  Food is CONTROL

What is our responsibility?

Support patients’ beliefs
• In spite of lack of evidence

Individualised advice
• Manage expectations
• Listen to priorities
And in the end, it’s not the years in your life that count. It’s the life in your years.

Abraham Lincoln