THE NEED FOR NUTRITIONAL SCREENING IN ONCOLOGY

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INTRODUCTION

• Malnutrition in cancer is a common and underrecognized problem

• Prevalence is 30-67% in hospitalised patients and 56% in outpatients

• Routine nutritional screening should be a standard procedure for every patient admitted to a hospital

Isering et al. Nutr Cancer, 2010

Huhmnn MB & Cunningham RS. Lancet Oncol, 2005
Chate AJ. J Hum Nutr Diet, 2006
THE TRUTH OF NUTRITIONAL SCREENING

• GI oncology outpatients
  – 40% of patients were weighed
  – 65% reported they had lost weight
  – 35% received dietary advice

  *Chate AJ. J hum Nutr Diet, 2006*

• 2/3 of nurses weighed the patient
• only 11% measured height; equipment was available in 17% of wards
• No questions about nutrition

  \[\text{NO IMPORTANT}\]

THE TRUTH OF NUTRITIONAL SCREENING

• Audit in a UK hospital (n= 328 pt)
  – Screening was completed in a 69% of patients
  – 14% were at high risk of malnutrition **BUT**...
    – no action was taken in 5.3% of the cohort

  *Lamb A et al. Br J Nutr, 2009*

• 1 in 4 severely malnourished patients was recognized by physician ⇒ no action was taken

• 80% expressed lack of confidence in identify malnutrition

  *Attar A et al. Nutr & Cancer, 2012*
SCREENING LEADS TO NUTRITIONAL CARE PLAN

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NUTRITION CARE PLAN

NUTRITIONAL SCREENING
- For all patients with cancer
- Rapid & simple linked to specific protocol of action
- Ideally conducted at admission and regular intervals
- Involves the use of several measures to determine nutritional status
- Conducted by clinician, dietitian or nutrition nurse
- Leads to an appropriate nutrition care plan

ASSESSMENT

MONITORING AND OUTCOME
- Monitor the effectiveness of the care plan i.e. body weight, dietary intake, ...

COMMUNICATION
- To other healthcare professionals
- Nutrition care plan when patient is transferred

AUDIT
- In a systematic way
- Outcome may inform future policy decisions

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ESPEN recommends ...

- Malnutrition Universal Screening Tool (MUST) for adults in the community
- Nutritional Risk Screening 2002 (NRS-2002) in hospitals
- Mini Nutritional Assessment (MNA) for elderly

### Initial screening: four questions

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is BMI &lt;20.5 kg/m²?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has the patient lost weight within the last 3 months?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Has the patients had a reduced dietary intake in the last week?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Is the patient severely ill? (e.g., in intensive therapy)</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

If the answer is ‘YES’ to any of the questions, perform the full screening.
If the answer is ‘NO’ to all questions, the patient is re-screened at weekly intervals.

#### Impaired nutritional status

<table>
<thead>
<tr>
<th>Score</th>
<th>Severity of disease</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal nutritional state</td>
<td>Normal nutr. requirements</td>
<td>0</td>
</tr>
<tr>
<td>Score 1 (mild)</td>
<td>Weight loss &gt;5% in 3 months or Food intake in preceding week 50-75% of normal requirement</td>
<td>1</td>
</tr>
<tr>
<td>Score 2 (moderate)</td>
<td>Weight loss &gt;5% in 2 months or BMI 18.5-20.5 + impaired general condition or Food intake in preceding week 25-50% of normal requirement</td>
<td>2</td>
</tr>
<tr>
<td>Score 3 (severe)</td>
<td>Weight loss &gt;5% in 1 month or BMI &lt;18.5 + impaired general condition or Food intake in preceding week 0-25% of normal requirement</td>
<td>3</td>
</tr>
</tbody>
</table>

### Calculation and interpretation of the total score

- Add total A + B = ?
- Age if ≥70 years: add 1 to total score above = age-adjusted total score
- Score ≥3: the patient is nutritionally at risk and a nutritional care plan is initiated
  - perform nutritional assessment, and implement local policies
- Score <3: weekly re-screening of the patient. If the patient e.g. scheduled for oncological treatment, a preventive nutritional care plan should be considered to reduce the associated nutritional risk.

**NUTRITIONAL RISK SCREENING 2002**

(NRS-2002)

MINI NUTRITIONAL ASSESSMENT (MNA)

I

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MALNUTRITION SCREENING TOOL (MST)

Fergusson M et al. Nutrition, 1999
**EVIDENCE TABLE: NUTRITION SCREENING IN ONCOLOGY**

<table>
<thead>
<tr>
<th>Author et al. [4]</th>
<th>Setting</th>
<th>Screening tool</th>
<th>Reference standard</th>
<th>Sample size/patients</th>
<th>Prevalence of MN or risk for MN (%)</th>
<th>Sensitivity (%)</th>
<th>Specificity (%)</th>
<th>Main conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amaral et al. [4]</td>
<td>Cancer inpatients</td>
<td>MST and MUST</td>
<td>NRS-2002</td>
<td>130</td>
<td>18 (MST) &lt;br&gt;44 (MUST) &lt;br&gt;29 (NRS 2002)</td>
<td>48 (MST) &lt;br&gt;97 (MUST) &lt;br&gt;77 (MUST)</td>
<td>MUST had the highest agreement with NRS-2002 in hospitalized cancer patients and better identified patients at risk for a longer length of stay</td>
<td></td>
</tr>
<tr>
<td>Bauer et al. [46]</td>
<td>Cancer inpatients</td>
<td>PG-SGA</td>
<td>SGA</td>
<td>71</td>
<td>76 (SGA)</td>
<td>98</td>
<td>82</td>
<td>Positive predictive value of the PG-SGA was 95% and the negative predictive value was 93%</td>
</tr>
<tr>
<td>Isenring et al. [47]</td>
<td>Cancer outpatients</td>
<td>MST</td>
<td>PG-SGA</td>
<td>50</td>
<td>34 (MST) &lt;br&gt;26 (PG-SGA)</td>
<td>100</td>
<td>92</td>
<td>MST has acceptable relative validity, sensitivity, and specificity relative to the PG-SGA to identify cancer outpatients at risk</td>
</tr>
<tr>
<td>Read et al. [49]</td>
<td>Cancer patients</td>
<td>MNA</td>
<td>PG-SGA</td>
<td>157</td>
<td>66 (MNA) &lt;br&gt;65 (PG-SGA)</td>
<td>97</td>
<td>54</td>
<td>Both tools reliably predicted MN, although the MNA lacks specificity.</td>
</tr>
<tr>
<td>Ferguson et al. [60]</td>
<td>Cancer outpatients undergoing radiotherapy</td>
<td>MST</td>
<td>SGA</td>
<td>106</td>
<td>11 (SGA) &lt;br&gt;28 (MST)</td>
<td>100</td>
<td>81</td>
<td>Positive predictive value of the MST was 40% and the negative predictive value was 100%</td>
</tr>
<tr>
<td>Bauer et al. [61]</td>
<td>Cancer inpatients</td>
<td>MUST</td>
<td>SGA</td>
<td>65</td>
<td></td>
<td>59</td>
<td>75</td>
<td>The MUST showed a low sensitivity and specificity compared with the SGA</td>
</tr>
<tr>
<td>Roulston et al. [62]</td>
<td>Cancer inpatients</td>
<td>MNA MUST</td>
<td>Nutritional assessment by dietician</td>
<td>52</td>
<td></td>
<td>92 (MNA) &lt;br&gt;29 (MUST) &lt;br&gt;79 (MST)</td>
<td>Both MNA and MUST are more appropriate for identification MN; the MUST showed a low sensitivity</td>
<td></td>
</tr>
<tr>
<td>Schwegler et al. [63]</td>
<td>Cancer inpatients undergoing colorectal surgery</td>
<td>NRS-2002</td>
<td>–</td>
<td>186</td>
<td></td>
<td>39</td>
<td>Nutritional risk identified by the NRS-2002 is a significant clinical predictor of postoperative complications and mortality (positive trend) in surgery for colorectal cancer</td>
<td></td>
</tr>
<tr>
<td>Bozzetti et al. [64]</td>
<td>Cancer outpatients</td>
<td>NRS-2002</td>
<td>–</td>
<td>1,000</td>
<td></td>
<td>34</td>
<td>Nutritional risk identified by the NRS-2002 shows a close relationship to weight loss and anorexia</td>
<td></td>
</tr>
<tr>
<td>Gupta et al. [65]</td>
<td>Ovarian cancer patients</td>
<td>SGA</td>
<td>–</td>
<td>132</td>
<td></td>
<td>50</td>
<td>Low SGA scores (i.e., well-nourished status) are associated with better survival outcomes</td>
<td></td>
</tr>
</tbody>
</table>


*Leuenberger M. Supp Care Cancer, 2010*
POTENTIAL BENEFITS OF NUTRITIONAL SCREENING

IDENTIFY PATIENTS AT RISK

COST-EFFECTIVE

PREVENT MALNUTRITION
THE ROLE OF THE NURSE IN THE NUTRITIONAL SCREENING

• Contact with patients on daily basis
• Able to identify changes i.e in food intake, weekly weight, ...
• Factors contributing to decrease intake i.e nausea, vomiting, pain, ...
• Identify and alert the appropriate expert
• Ensure nutritional support in
Phase 1: n = 200 patients
Phase 2: n = 450 patients

Implementation of a screening tool in radiotherapy department

Interactive sessions for physicians, nurses and RT technicians.
RESULTS

- Increase in adherence
- Nurses doubled their involvement. Contact limited to toxicity.
- Time to complete de screening between 50´´ and 1.30´
- Percentage of weight loss recorded until 84%

Figure 2. Patients screened by the Malnutrition Universal Screening Tool (MUST) in phase 1 (100%, n = 200) and phase 2 (100%, n = 450).
CONCLUSIONS

• Nutritional screening is **essential** for early and adequate nutritional support for those **identified** as malnourished to improve clinical outcome and it has been proved to be cost-effective.

• **Nurses** play a **vital role** in the identification of malnourished patients, the continued assessment of those at risk of developing malnutrition and the evaluation of the efficacy of nutritional intervention.

• Hospitals should ensure that strategies are in place for the **education** of staff in recognising and appropriately **referring** those at risk, and the nutrition and dietetic services are equipped to meet the demand that will arise from the increased identification of malnutrition.
PLEASE USE A NUTRITIONAL SCREENING TOOL

THANK YOU FOR YOUR ATTENTION