Nutritional aspects of cancer prehabilitation

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The Wessex Agenda: Personalising the Health and Wellbeing of Patients from the Point of Diagnosis
20th March 2019, Eastleigh
Four key points to consider:

1. Being undernourished matters
2. Identify risk - make a nutritional diagnosis – meet the needs of the patient?
3. Start early – anticipate needs
4. Undernutrition is cumulative, actively intervene throughout journey
Cancer is not one disease

Wasting

Metabolic

Children

Nutritional considerations are different ...
Being under-nourished matters!

Perioperative Quality Initiative (POQI 2) – Wischmeyer et al Anesth Analg 2017

Figure 1. Facts and data for perioperative nutrition screening and therapy. Data drawn from Awad and Lobo, Williams and Wischmeyer, and Philpason et al. R.I.P indicates rest in peace.

Pre-Op nutritional risk assessment?
What do our patients think?

Cancer and Nutrition
NIHR infrastructure collaboration

Improving cancer prevention and care.
For patients, for clinicians, for researchers.

NIHR Cancer & Nutrition Collaboration Survey 2017
Most discuss
Few aware
Few trained

NIHR Cancer & Nutrition Collaboration Survey 2017
The patient’s perspective.....

“I was told by my consultant that there was no evidence about nutrition and cancer.”

“I asked several times for advice about diet and was just told to eat a balanced diet.”

“[We would like] help with nutritional myth-busting.”

“[We want to be] treated as individuals with individual cancers.”

NIHR Cancer & Nutrition Collaboration Survey 2017
Our approach

Illness

Poor diet, Inactivity, Smoking

Altered metabolic machinery

Physiologically & Metabolically Unfit

Increased vulnerability

Poor experience & outcome

Treatment

Intervene through nutrition, exercise and psychological support to improve resilience, response & outcomes
ESPEN guideline: Clinical nutrition in surgery

Arved Weimann a,*, Marco Braga b, Franco Carli c, Takashi Higashiguchi d, Martin Hübner e, Stanislaw Kieł f, Alessandro Laviano g, Olle Lungqvist h, Dilee N. Lobo i, Robert Martindale j, Dan L. Waitzberg k, Stephan C. Bischoff l, Pierre Singer m

ESPEN guidelines on nutrition in cancer patients*

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

ESPEN expert group recommendations for action against cancer-related malnutrition

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“Fit to fight Cancer?”

Developing UK wide principles and guidance for prehabilitation in oncology

Developing UK wide principles and guidance for prehabilitation in oncology – 5 evidence domains

- Screening all for risk
- Assessing status - Make a diagnosis

Implementation within health system

Work force development – capability & capacity

NEEDS-BASED PREPARATION FOR TREATMENT
- Advice
- Self management
- Community-based care
- Facility-based care +
- Manage Co-morbidity
Screening

• Not just once – continuous across all settings and stages of care
• Everyone – not just those obviously at risk
• Integrated into care with documentation + flags
• Use validated tool that includes BMI, weight loss, and dietary impact symptoms (eg MUST >> Royal Marsden Nutrition Screening Tool)

• Screening directs to care pathway – stratified care
  • Highest risk requires referral for formal nutritional assessment
Assessment

• Conducted by competent professional – Registered Dietitian

• Repeat throughout care

• Make a nutritional diagnosis – intake, availability, losses, demands
  • Assess appetite and intake – dietary impact symptoms
  • Assess body composition – lean depletion (+/- Fat Mass)
  • Assess micronutrient status

• Determine nutritional needs

• Agree and document nutritional care plan
  • process, review points & outcomes
  • Report plan to MDT
Intervention – needs-led

Low risk - advice
• teachable moment to offer ‘eating well’
• recognise and report change in state

Moderate risk – dietary counseling
• Manage dietary impact symptoms
• Improve oral intake – food first

Highest risk – counseling + nutritional support
• Oral nutritional supplements
  • Balanced (high protein, immune enhancing)
  • micronutrients
• Enteral nutrition (tube)
• Parenteral nutrition (iv)
Two or three servings a day – issues of adherence?
Fewer postop complications with ONS or Enteral Tube Feeding in GI Surgery

Meta-analysis (18 randomized controlled trials, n=902) shows fewer complications with enteral nutrition (oral nutritional supplements and tube feeding) in gastrointestinal surgical patients. *Study uses a ‘home-made’ supplement. CI, confidence interval; ETF, enteral tube feeding; ONS, oral nutritional supplements.

OR 0.37 (0.26-0.53)
Calculated net savings with ONS based on LOS

Improved outcomes in GI surgery

- Lower mortality (OR 0.59 0.48-0.72)
- Fewer postop complications
- Shorter LOS
- Earlier return of GI function
- Lower rate of re-operations
- Attenuates gut permeability
- Improved wound healing
- Less PN use

Stratton & Elia Eur J Gastroent Hepatol 2007; 19, 353-8
Prehabilitation - Nutrition-only and multimodal on Length of Stay

Figure 2: Effect of nutrition-only prehabilitation and multimodal prehabilitation on length of hospital stay after colorectal surgery. *Denotes studies using the Enhanced Recovery Pathway. CI, confidence interval; WMD, weighted mean difference.

Effect persists +/- ERP or PostOp intervention

Gillis et al. Gastroenterology 2018; 155; 391-410
What about the obese patient?

• Excess adiposity may not be reflected in BMI (sarcopenic obesity)
• Associated with increased risk
• Excess adiposity may mask deficits that increase risk
• Avoid drastic dietary restriction and rapid weight loss immediately prior to treatment
• Improve metabolic function by exercise & correcting deficits
• Address excess adiposity after treatment
Take homes

• Consider nutritional needs of those undergoing treatment

• Poor nutrition impacts on experience and outcomes

• Must screen, assess and intervene on needs-led basis from outset

• Nutritional interventions work before, during and after treatment
NIHR Cancer and Nutrition Collaboration

Driving research and action focused on diet, nutrition & physical activity in cancer.

www.cancerandnutrition.nihr.ac.uk
Personalised, stratified care
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