

Guidelines & References

ESPEN expert group recommendations for action against cancer-related malnutrition

ESPEN practical guide: Clinical nutrition in cancer

Clinical Oncology Society of Australia.

Position statement: Cancer-related malnutrition and sarcopenia

Grading

Uses tumour biopsy

X to 4

Higher grade = undifferentiated = more intense treatment

Gx = grade cannot be assessed (undetermined)

G4 = undifferentiated (high grade)

undifferentiated = *cells that don't look or act like normal cells. They've lost their original identity and are very abnormal.*

description of a tumour based on how abnormal the tumour cells look under a microscope.

It is an indicator of how quickly the tumour is likely to grow and spread.

Staging

TNM. Higher number = more severe

T = tumour size (1-4). Higher number = larger tumour

N = number of lymph nodes which contain cancer (1-3). Higher number = more lymph nodes affected

M = Distant metastasised. X = cannot be measured. O = no met. 1 = met.

T4N3M1 = large tumour which has spread significantly to lymph nodes and has metastasised – will continue to grow & spread rapidly

Not usually used for: Leukaemia, Lymphomas, Myelomas

Terminology + acronyms

Benign (nonmalignant) = not cancer

Malignant = cancer

Metastasis = spread of cancer cells

Neoadjuvant: Treatment given as a first step to shrink a tumour before the main treatment (usually surgery). Includes chemo, radiation or hormone therapy

Adjuvant: Additional treatment given after the primary treatment to lower the risk of the cancer coming back. Includes chemo, radiation, hormones, biological or targeted therapy

Cancer cachexia: unintentional weight and muscle loss in people with cancer, not fully reversible by eating more

Gy: grey - measures radiation

#: fractions - radiation dose - has to be fractioned because one fraction would be too damaging

70Gy/35# = 70 Grey total radiation broken up into 35 #

hypogeusia: decreased taste sensitivity

hypergeusia: increased taste sensitivity

Phantogeusia: Perception of an unpleasant taste, without actually eating anything

Breakthrough nausea: occurs despite the use of preventive (prophylactic) antiemetic medications

Types of cancers

Carcinomas Most common. Arise from epithelia cells. Breast, prostate, lung, colorectal, melanoma.

Lymphoma Cancer of the lymphatic system (hodgkin lymphoma and non- Hodgkin lymphoma)

Leukemia Cancer of white blood cells, often starting in bone marrow

Types of cancers (cont)

Multiple myeloma A cancer of plasma cells in the bone marrow.

Sarcomas From bone, muscle, fat. Osteosarcoma (bone), Leiomyosarcoma (smooth muscle tissue)

Glioblastoma An aggressive brain tumor.

Basal Cell Carcinoma (BCC) Subtype of skin cancer - common - rarely met.

Metabolic Changes

Cachexia + sarcopenia

Due to treatment: stem cells + blood cells depleted - anaemia, impaired blood clotting, more susceptible to infections

Treatment

Chemo Oral, IV or injection

Stop or slow growth through irreversible damage to the DNA - kills all fast-growing cells - incl healthy cells

Given in cycles – gives the healthy cells a chance to grow back. C3D8 = cycle 3 (of 8), Day 8 (of the 14 day cycle)

S/E: V&D, constipation, dysphagia, fatigue, altered taste, oral thrush, thickened saliva, reflux, dry mouth, mucositis

Immuno therapy Helps the patients own immune system to fight cancer Eg. immune checkpoint inhibitors or monoclonal antibodies

Not as big effect on nutrition



By Michellephillips02

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Treatment (cont)

S/E: Diarrhoea, abdo pain, bloating

Radiation (XRT) Kills or slows the growth of cells by damaging the DNA. In a big machine (linear accelerator or LINAC), similar to a CT scan. Measured in "grey" and given in "fractions"

S/S occur after 2 weeks of treatment & accumulate

S/E: Fatigue, dysphagia, diarrhea, vomiting, thick saliva, pain, taste changes, damage to bowels (eg bleeding)

Internal radiation: radiation is placed inside the body. e.g radioactive iodine liquid (systemic therapy) is used for thyroid cancer.

EXTERNAL BEAM RADIATION THERAPY: most common type of radiation.

Intervention

Symptom management

Malnutrition assessment: SGA, PG-SGA SF (for chemo)

Malnutrition screening – MST, MUST

Sarcopenia screening (SARC-F)

HPHE - ONS/Fortification/EN

Educate: Food safety & hygiene – Immuno-compromised. Avoid illness

Depending on the person/prognosis: low-inflammatory foods – more so in people In remission

Consider: site of cancer, refeeding risk, tube position (is it in the right place?)

Nut Reqs

Energy ~125kJ

Chemo & Radiation: >125kJ/kg

Cancer cachexia: >125kJ/kg

Malnutrition = repletion (125-145kJ)

Protein ~1.2-1.5g

Chemo & Radiation: >1.2g/kg

Older/chronically ill/repletion: 1.2-1.5g/day

Renal failure: 1.0-1.2g/kg

Cancer cachexia: > 1.4g/kg

SPEN: 2.0-2.2g EPA and 1.5g DHA

SPEN: Leucine 2-4g; HMB 3g; Glutamine 0.3g/kg; Carnitine 4-6g; Creatine 5g

SPEN: 600-800 IU Vitamin D + multivitamin/minerals

Example PESS

*Inadequate oral intake related to loss of appetite and nausea 2 to chemotherapy, as evidenced by pt consuming ~__% of EER and __% of EPR**

Food and nutrition knowledge deficit

Inadequate protein-energy intake

Medications

Drug	Indication	S/E
ondansetron	Prevention, treatment of nausea, vomiting.	constipation, xerostomia
metoclopramide	nausea, vomiting	GI upset, oedema
dexamethasone	Corticosteroid	
loperamide	Symptomatic relief of acute nonspecific diarrhoea	
Lomotil	Opioid. Adjunctive therapy for acute, chronic diarrhoea	
Codeine	Opioid analgesic. Short-term management of severe pain	

Nutrition Strategies – based on S/S

CTCAE Grading 1 to 5. 1 = mild, intervention not indicated. 5 = death related to S/S.

Taste Changes

tasteless: add salt or seasoning, ginger, pickles, honey, adding herbs/spices, honey, pickles, marinades, sauces etc. Varied texture and taste (e.g. adding granola, freezing smoothies) - can make the eating experience more exciting. Over-the-counter artificial salivas. Flavour enhancers - e.g. miracle berry.

too strong: use straw. No added sugar products. Low salt alternatives. Avoid fizzy drinks/mints/chewing gum

Too salty: Roast meats over deli meats. Add sugar or honey to food.

Too sweet: Avoid added sugars/fruit etc. Plain breakfast cereals. Add salt or lemon juice.

Metallic: ginger, small sips of flavoured drinks. Non-metallic cutlery. Suck on boiled lollies. Brushing teeth just before & after eating. Bicarb mouth wash before eating.

Feel like "sand", "straw" "cardboard" – Change the consistency of the food, soft, moist foods, add sauces/gravies, soups & smoothies, drink lots of water, medications to replace saliva

pink lady – Gaviscon + a numbing agent – pharmacist

Smell changes

Ask friends/family to cook for you

Cook in bulk and freeze

Bland foods.

Cold or room temp (avoid hot)



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Nutrition Strategies – based on S/S (cont)

Avoid strong flavours: garlic, onion etc

N/V

Medications – pharmacist

Cold or room temp food – usually better tolerated. sandwiches, salads, jelly, custard and yoghurt (NEMO)

Smaller frequent meals – avoid having an empty stomach Peppermint or ginger

Take opioids with crackers or light meal

Salty snacks/dry crackers, biscuits, noodles, cereal, toast, pretzels, crackers

Avoid skipping meals/snacks as empty stomach can worsen

Avoid alcohol and high volumes of coffee sucking on ice blocks

regular small sips of water or cold clear fluids – cordial, lemonade, ginger ale, juice

Mucositis & dysphagia

Artificial sweeteners

Sugar free gum

Avoiding hot food

Avoiding sources of trauma – hard toothbrush, crispy foods

Analgesia mouth washes - before food to improve intake

Causes to consider: oral thrush, xerostomia

Diarrhoea

Medical management – consult medical team/Pharmacist

Monitor dehydration & electrolyte losses

Nutrition Strategies – based on S/S (cont)

ORS (oral rehydration solutions):

homemade or double strength hydrolyte

Consider non-treatment causes – Fibre, lactose, intolerances, sugar-free products

Limiting fatty/greasy dishes, high fibre foods and fizzy drinks

Bland foods

Avoid caffeine

Try low lactose alternatives

Excess fructose (e.g. fruit juice) can exacerbate diarrhoea

Soluble fibre - psyllium husk - can help bulk the stool

temporary Low fibre and/or low FODMAP

Monitor for signs of pancreatic exocrine insufficiency (fat malabs, greasy stools etc)+ stool tests for infections

Loss of appetite/Anorexia

Meds: Appetite stimulants

HPHE & ONS – Sustagen, up & go, milkshakes etc

6 smaller meals/day - use smaller plates

Encourage to eat by the clock – avoid waiting until they are hungry

Eat when appetite is better – commonly morning

Encourage favourite foods – discuss with family

Social eating

Softer foods that don't require chewing

Cook in bulk and freeze – less exposure to food smells

Have ready-prepared meals/snacks

Nutrition Strategies – based on S/S (cont)

Encourage gentle exercise

Consider: mouth sores/changes/infections?/aging/other medications, psychosocial factors

Oral Health/dry mouth

Regular sips of water to keep mouth hydrated & stimulates saliva

Gum, sucking on lollies

Sodium bicarb mouth wash

Artificial saliva, alcohol free mouth wash

Oral adhering discs

Moist foods + sauces and gravies

Dry mouth: EVOO: acts as a mouth lubricant

Mucositis: Honey + coffee mouth rinse or sip (300g honey + 20g - mix 10ml of honey mixture w/ hot water. Either rinse or sip. 10mL every 3hrs)

Early Satiety

Small, frequent nutrient dense meals

Avoiding nutrient-free drinks

Avoid having fluids with meals - have inbetween

Prokinetics: increase gastric emptying (e.g. metoclopramide, erythromycin)

Medpass: small volumes of high-calorie, high-protein supplements (like fortified shakes) are administered alongside routine medication times.

Distraction technique - takes some of the focus off food: social eating, calling friends, puzzles, colouring, watching a show, colouring/drawing/painting. Risk of 'forgetting' about the food - better when someone else is there



By Michellephillips02

cheatography.com/michellephillips02/

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Nutrition Strategies – based on S/S (cont)

Nourishing fluids in between meals

Causes to consider: delayed gastric emptying, nausea, Medications that slow gastric emptying

Constipation

Consider other causes: Dehydration, decreased PA, decreased overall intake, hypercalcemia, hypokalemia

Medication: stool softener, Osmotic laxative,

Fibre supplements: insoluble + soluble

Encourage fluid intake

Encourage PA

Interventions before/after surgery

ERAS protocol

EN Indicated when:
(head
&
neck
ca)

5% LOW prior to surg, OR 10%
LOW 6/12

Ongoing dehydration or dysphagia
or pain associated with E+D

SPL - severe aspiration 65+ years
old

High risk of long term swallowing
difficulties - e.g. high doses of
chemo + radiation planned after
surgery

PN When indicated



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