

# **Late Stage Cancer and Nutrition**

CNS, June 5, 2010

Scott Whittaker

BC Home Enteral & Parenteral Nutrition Program

# Objectives

- to review malnutrition in cancer
- to review data available for the efficacy of nutritional intervention in late stage cancer
- to try to decide if and when such patients should be offered nutritional support

# Why am I giving this talk?

- I had forgotten how difficult the subject is
- I was cornered in a restaurant at the Chateau Laurier in Ottawa after consuming alcohol
- I suffer from inadequate personality disorder and can't say no; but
- it is a fascinating topic

# What we won't be discussing

Role of parenteral nutrition in changing outcomes in certain cancer patients, such as those:

- going for surgery (e.g. upper GI malignancy)
- receiving inpatient adjuvant treatment (e.g. leukemia, bone marrow transplantation)
- “cured” patients who need HPN (e.g. radiation enteritis)

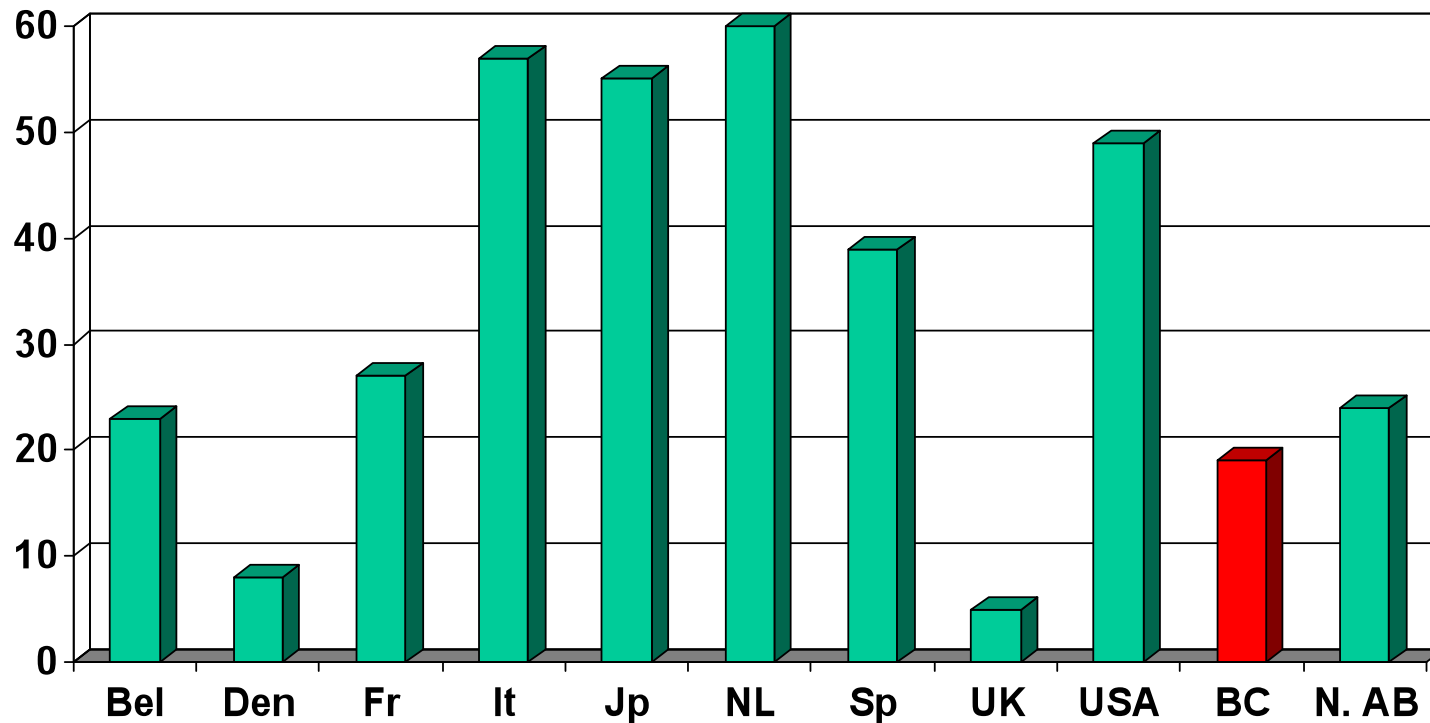
# The Elephant(s) in the Room



- the treatment of incurable cancer patients is emotional
- the approach to nutritional intervention in incurable cancer patients varies considerably in the literature
- different jurisdictions have widely divergent numbers of cancer patients in their home programs

# Cancer patients in HPN programs

(% of all patients trained)



*from Clin Nutr 1999;18:135-40, Gastroenterology 1995;109:355-65,  
Appl Physiol Nutr Metab 2008;33:102-6 & personal data*

# Some article & editorial titles

- Must every cancer patient die with a central venous catheter? (Clin Nutr 2002;21:269-71)
- Nutrition support in patients with advanced cancer: permission to fall out? (Proc Nutr Soc 2004;63-431-5)
- Doctor, does this mean I'm going to starve to death? (J Clin Oncol 2004;22:199-210)

# Why treat?

- some incurable cancer patients can live for many months, even years
- healthy humans of normal body weight survive about 2 months without nutrition
- therefore, some cancer patients may die of malnutrition before they die of their tumor

# Why not treat?

- many incurable cancer patients have a very limited lifespan; training such patients or their families to do nutritional support at home wastes valuable time
- prolonging life of a person with a poor quality of life doesn't make sense
- it's just too expensive
  - \$/QALY, yadda yadda yadda

# Cancer & weight loss

- Why do cancer patients lose weight?
  - decreased intake
    - anorexia
    - bowel symptoms (esp. obstruction)
  - altered metabolism
    - presumed to be related to cytokine release
    - reduced physical activity

# Enteral support literature

- very limited data related to enteral nutritional support in advanced cancer
- recent review of enteral nutrition in treatment of cancer patients listed only level IV evidence for efficacy in the incurable cancer patient (ESPEN Guidelines)
- however, parenteral nutrition data *likely* apply to enteral nutrition

*Arends J et al. Clin Nutr 2006;25:245-59*

# Cancer diagnoses in HPN patients

- Gastrointestinal
  - stomach, pancreas, colorectum
  - esophagus, gallbladder, small bowel
- Non-gastrointestinal intraabdominal/pelvic
  - ovarian, uterine, cervical
- Extra-abdominal
  - breast, lung, others

# HPN in Denmark

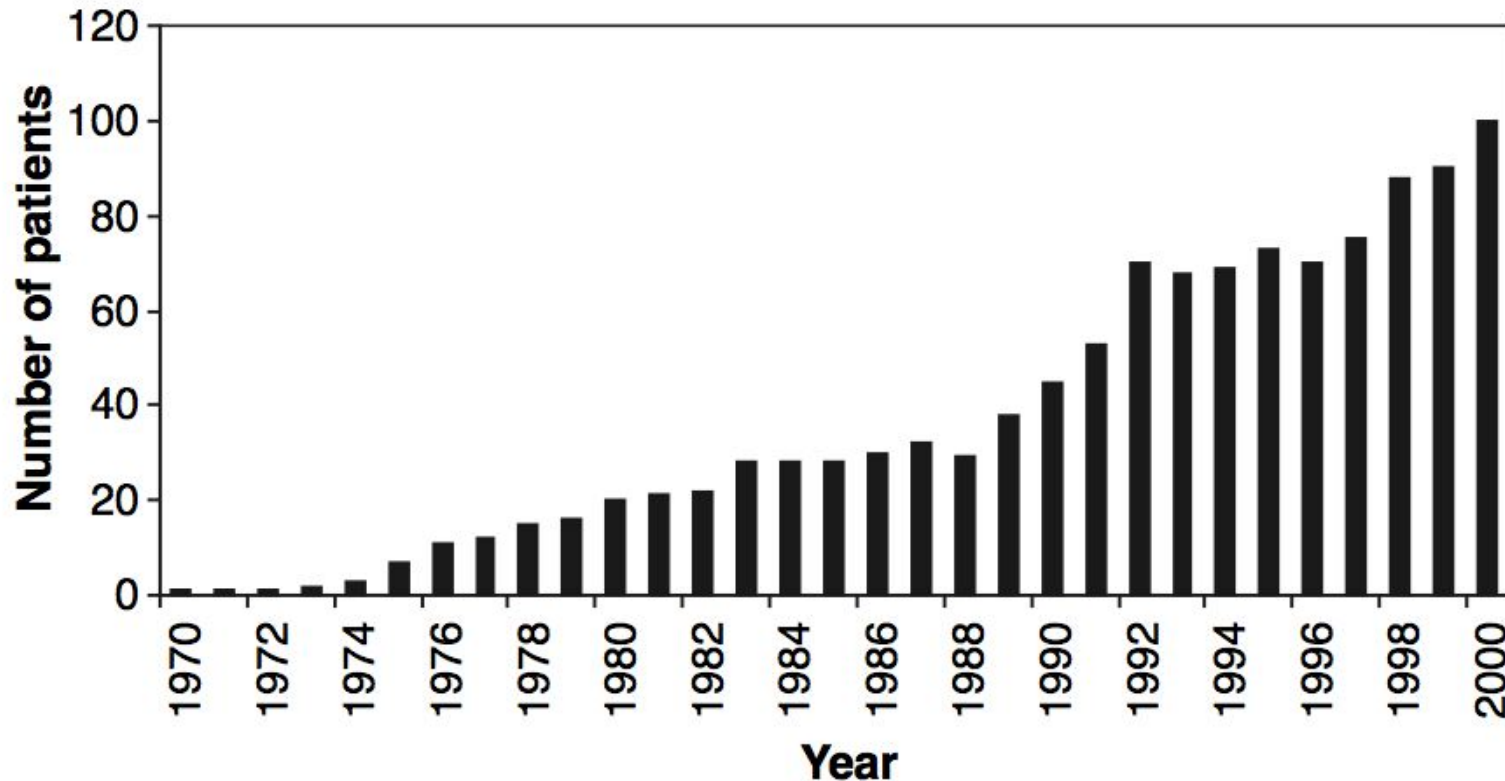


Figure 1. Number of patients receiving home parenteral nutrition in Denmark from 1970 to the end of 2000.

*Ugur A. Scand J Gastroenterol 2006;41:401-7*

# HPN in Denmark

- In addition to an increase in overall HPN:
  - there has been an increase in % cancer patients
    - 1991 - 1996: 17%
    - 1996 - 2001: 24%
  - in absolute numbers of cancer patients
    - 1991 - 1996: 22
    - 1996 - 2001: 48 } more than 100% increase

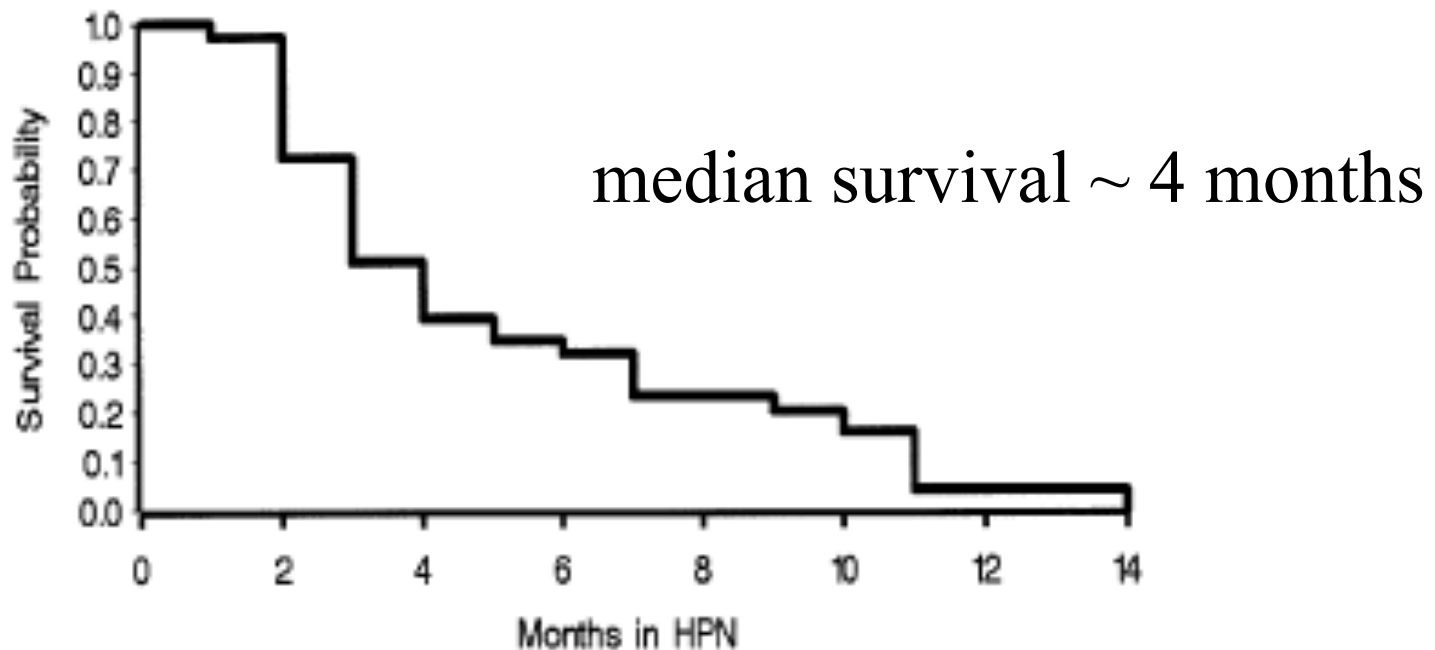
*Ugur A. Scand J Gastroenterol 2006;41:401-7*

# Goals of nutritional therapy

- improve survival
  - improve quality of life
  - improve nutritional status
- } area under the curve

# Cancer outcomes on HPN

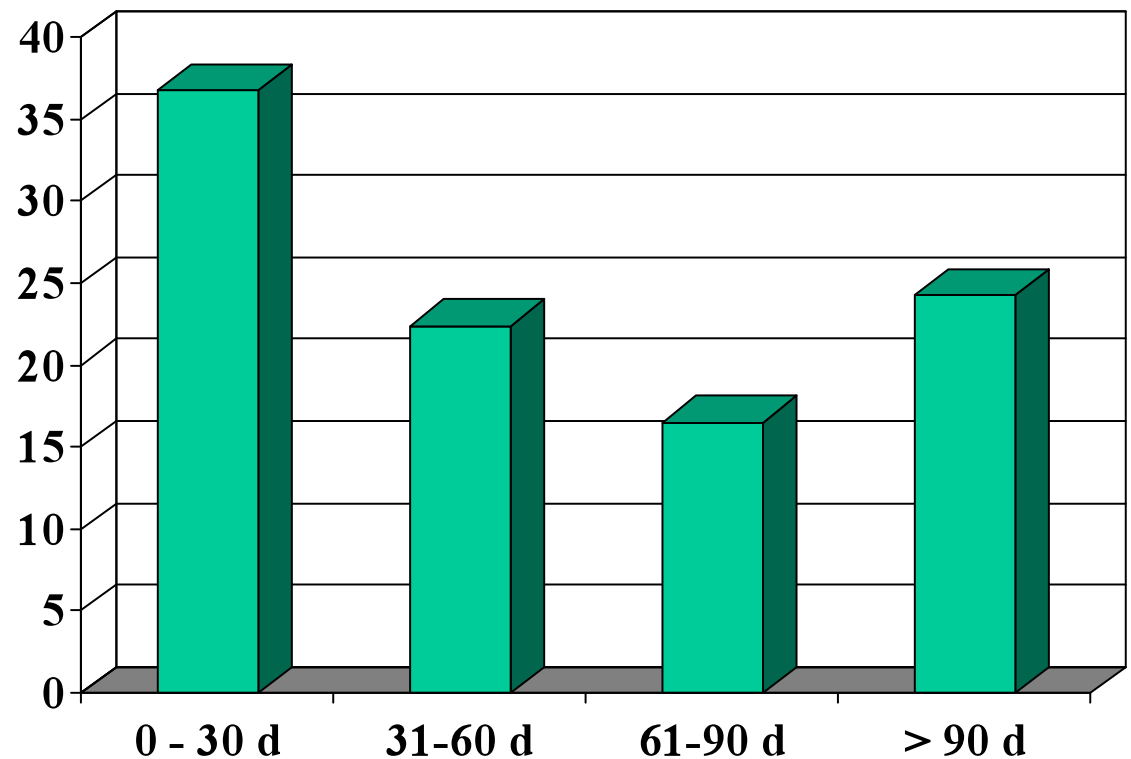
- Italian study – 6 centers, 84% bowel obstruction
- 69 adult cancer patients



*Bozzetti F et al. Clin Nutr 2002;21:281-8*

# Cancer outcomes with HPN

- 152 patients
- bowel obstruction
- Naples, Italy
- 1996 – 2003
- Survival
  - median 45 d
  - range 6 – 1269 d



*Santarpià L et al. Nutrition 2006;22:355-60*

# Predictors of short survival

- predicting short (< 60 d) survival
  - Karnofsky  $\leq 40$ , albumin < 30, presence of pain and vomiting

*Santarpia L et al. Nutrition 2006;22:355-60*

# Karnofsky performance scale

100	Normal
90	Able to carry on normal activity; minor Sg/Sx
80	Normal activity with effort; some Sg/Sx
70	Cares for self. Unable to do normal activity
60	Requires occ assistance; able to care for most needs
50	Requires freq assistance and freq medical care

# Karnofsky performance scale - 2

40	Disabled, requires special care and assistance
30	Severely disabled; hospitalization indicated
20	Hospitalization necessary; very sick
10	Moribund, fatal processes progressing rapidly
0	Dead

# Other retrospective survival studies

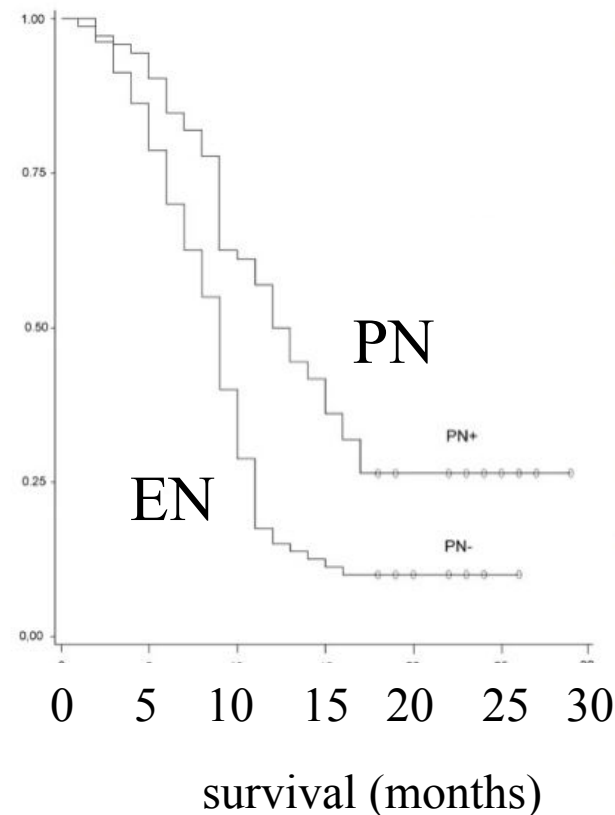
Mayo Clinic study found no survival effect w.r.t.

- grade of tumor
- duration of known metastatic disease
- presence of symptoms
- cancer therapy while on TPN

*Hoda D et al. Cancer 2005;103:863-8*

# Prospective randomized studies

- limited information
- prospective trial comparing PN to supplemented EN in 160 patients with various end-stage malignancies
- not obstructed



*Shang E et al. JPEN 2006;30:222-30*

# Prospective randomized studies - 2

## Palliative nutritional intervention

- 309 patients: all received indomethacin + EPO
- randomized to receive PN or “spontaneous nutritional intake” only (included supplements)
- there was no statistically significant difference in survival between PN and control patients
- as-treated analysis showed significantly improved survival

*Lundholm K et al. Cancer 2004;100:1967-77*

# Prospective randomized trials - 3

- studies have evaluated non-obstructed patients
- survival benefit of PN in addition to oral/enteral not clear
- no studies on obstructed patients

# Quality of life

Bozzetti's study of 69 cancer patients

- Rotterdam symptom checklist (RSCL)
- progressive decline in Karnofsky and RSCL in the 1 – 2 months prior to end of Rx

“it would appear that on the average only patients who survive for longer than 3 months have enough time to benefit – though only temporarily”

*Bozzetti F et al. Clin Nutr 2002;21:281-8*

## Quality of life - 2

- 75 cancer patients from 9 institutions evaluated retrospectively
- 66% obstructed, 72% metastatic (but 92% died)
- HPN preserved Karnofsky performance status in patients who survived > 3 months

*Cozzaglio L et al. JPEN 1997;21:339-42*

# Nutritional status

- PN appears to be able to maintain or improve nutritional status in patients surviving 3 months
- since cancer patients do not have normal metabolism, start PN early in those who are considered eligible for HPN before significant weight loss
- near death, nutritional parameters decline

# Predicting clinical outcome

“For now, we remain at a loss as to how to identify patients that may benefit from HTPN [home total parenteral nutrition] before beginning therapy”

Alan L. Buchman, 2002

# Conclusions – cancer and HPN

- in incurable cancer patients who have bowel obstruction, there may be some benefit of HPN in those surviving  $\geq 3$  months
- unfortunately, there are only crude markers to predict survival in cancer patients
  - Karnofsky  $\geq 50$
- patients should be started on PN before significant weight loss occurs

# What do we do in BC?

- accept referrals from oncologists/surgeons
- discuss with oncologist/surgeon
  - the current function of the patient
  - expectation for survival
- meet with patient & family (when possible)
  - explain process
  - evaluate expectations

# What do we do in BC ~ concerns

- pressure to do *something*
- palliation has not always been adequately explored
- try to separate family versus personal wishes
- keen on young, high functioning patients
- concern regarding medications, especially narcotics
- stopping TPN is very difficult



