Dénutrition du patient cancéreux

Dr Emmanuel Toussaint / Gastro-entérologie / Support Nutritionnel / Institut Jules Bordet

IMPORTANCE DU PROBLÈME

ETUDES NATIONALES

Country	n	Type	Malnutrition	%
Brazyl	8529	Hospital Nursing Home Home Care	PP > 10% involontaire en 6 mois	12%
Netherlands	4000	Hospital	SGA	12,5% (dénutrition sévère)
Germany	1886	Hospital	SGA	9,8% (dénutrition sévère)
Meijers	2025 5	Nursing Home (60%) Hospital (40%)	questionnaire	18,5% 14,8%

Kruizenga Clin Nutr 2001
Waitzberg Nutrition 2003
Pirlich Clin Nutr 2006
Meijers Nutrition 2007

The German Hospital Malnutrition Study

SGA (B+C)	Dénutrition
Globale	27,4%
Gériatrie	56,2%
Oncologie	**37,6%**
Gastro-entérologie	32,6%

1886 patients – 13 hospitals

Pirlich, Clin Nutr 2006

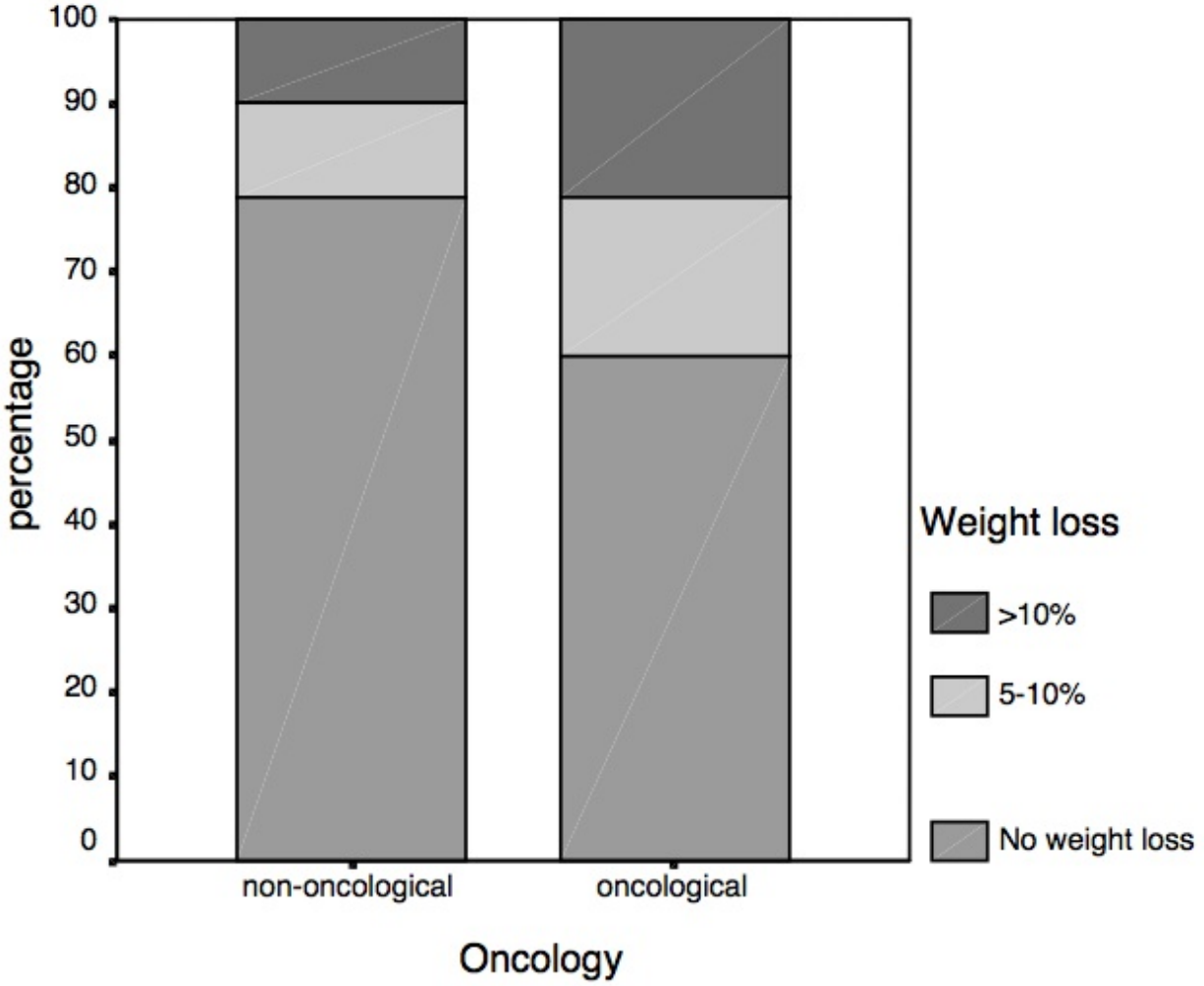

Fig. 1 The percentage of oncological and non-oncological patients, categorised by percentage of weight loss.

Kruizenga, Clin Nutr 2001

Table 2A Patient characteristics and type of disease

Patient characteristics	Total	Breast cancer	Head and neck cancer	Colorectal cancer	Haemato-logical malignancy[a]	Gynaeco-logical cancer[b]	Upper digestive cancer[c]	Lung cancer	Others[d]
(Number) %	(1545) 100%	(375) 24.3%	(179) 11.6%	(156) 10.1%	(156) 10.1%	(137) 8.9%	(103) 6.7%	(90) 5.8%	(349) 22.6%
Age (years)	59.3 ± 13.8	58.2 ± 12.7	59.4 ± 9.8	64.6 ± 12.5	57.3 ± 16.8	59 ± 12.7	62.6 ± 11	60.2 ± 11.2	58 ± 16.6
>70 years	23%	19.7%	13.4%	34%	24.3%	19.7)	26.2%	18.9%	13.4%
M/F ratio	0.746	0.011	3.48	0.95	1.48	0	2.43	1.43	0.75
Metastases	46.6%	44.3%	24%	63.5%	16%	60.6%	50.5%	81%	51.3%
Outpatient/in-patient	15.6/84.4%	24.9/75.1%	6.2/93.8%	28.2/71.8%	9.2/90.8%	12.7 /87.3%	14.8/85.2%	9.6/90.4%	10.1/89.9%
WHO PS 0–1	49.8%	64.2%	47%	51.3%	40.7%	46.4%	45%	26.4%	48.4%
WHO PS 2–4	50.2%	35.8%	53%	48.7%	59.3%	53.6%	55%	73.6%	51.6%
6 Months WL									
No	39.6%	53.7%	25.8%	31.6%	43.7%	39.3%	21%	34.6%	40.3%
0% > WL <5%	19.5%	22.1%	17.6%	20.9%	13.4%	15.6%	15.8%	16%	23%
5% ⩾ WL <10%	17.4%	11.9%	19.5%	24.5%	17.9%	17.2%	19%	19.8%	18%
10% ⩾ WL <15%	12.6%	6.9%	17.6%	14.4%	17%	13.1%	22.1%	11.1%	11.2%
>15%	10.9%	5.4%	19.5%	8.6%	8%	14.8%	22.1%	18.5%	7.5%
Current BMI	24.1 ± 4.7	24.7 ± 4.7	22.7 ± 4.5	24.1 ± 4.1	24.9 ± 4.8	24.5 ± 5	22.8 ± 4.3	24.9 ± 4.8	24.2 ± 4.8
<18.5 + ⩽70 years	8.4%	5.2%	15.1%	6%	5.6%	8%	12%	15.3%	15.1%
<21 + >70 years	4%	3.6%	2.3%	7.4%	2.1%	1.6%	5%	4.7%	2.3%
%BMI ⩾ 30	11.1%	14.2%	8.1%	11.4%	14.8%	11.2%	6%	4.7%	8.1%
BMI 6 months previously	25.2 ± 4.9	25.1 ± 4.6	24.6 ± 5.1	25.6 ± 4.7	26 ± 5.3	25.7 ± 5.7	25 ± 4.9	24.7 ± 4.5	24.7 ± 4.5
%BMI ⩾ 30 (every 6 months)	15%	13.2%	15.1%	18.3%	17.6%	17.3%	17.5%	13.1%	12.9%
Malnutrition	1364								
None	69.1%	81.7%	54.4%	68.8%	65.8%	68%	50.5%	59.8%	73%
Present	30.9%	18.3%	45.6%	31.2%	34.2%	32%	49.5%	40.2%	27%
Moderate	18.6%	11.2%	22.5%	22%	26.3%	16.4%	26.3%	21.9%	18%
Severe	12.2%	7.1%	23.1%	9.2%	7.9%	15.6%	23.2%	18.3%	9%

Abbreviations: BMI = body mass index; PS = performance status; WHO = World Health Organisation; WL = weight loss. [a]Leukaemia, lymphoma, myeloma. [b]Ovarian and uterine cancers. [c]Cancers of the oesophagus, stomach and pancreas; liver carcinomas. [d]Prostate, urinary, brain, thyroid, testicular and kidney cancers; trunk and limb sarcomas; melanoma; other thoracic or abdominal tumours; unclassified tumour.

Pressoir; Br J Cancer 2010

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Moderate	18.6%	11.2%	22.5%	22%	26.3%	16.4%	26.3%	21.9%	18%
Severe	12.2%	7.1%	23.1%	9.2%	7.9%	15.6%	23.2%	18.3%	9%

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Pressoir; Br J Cancer 2010

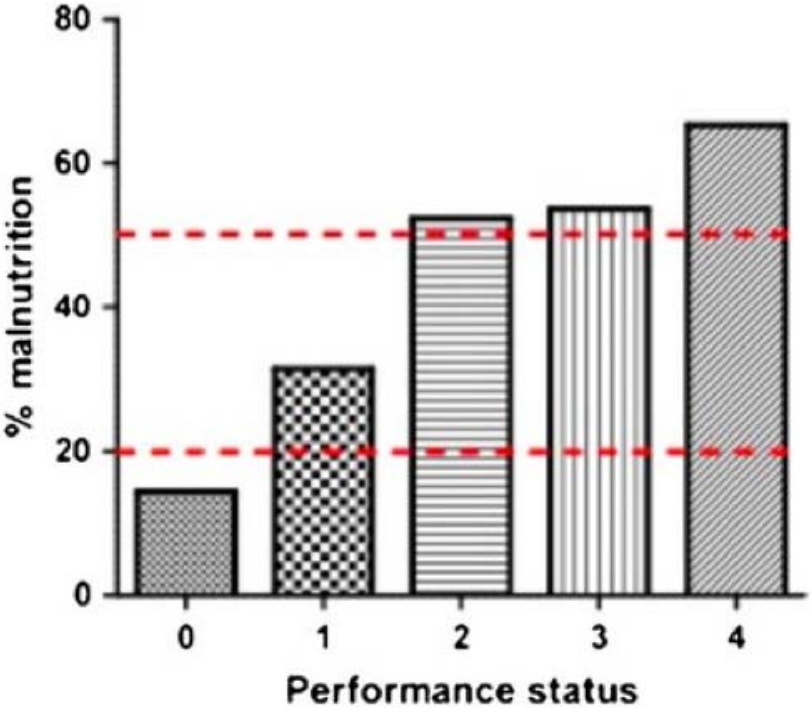


Fig. 1 Prevalence of malnutrition in patients with a performance status ranging from 0 to 4

154 institutions de soins oncologiques
2068 patients
Malnutrition:

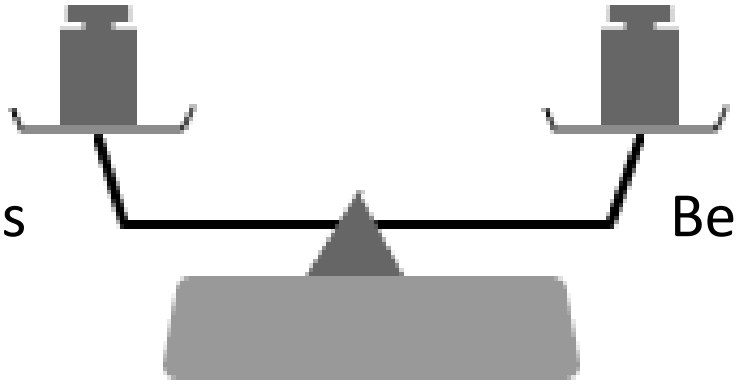
IMC < 18,5 kg/m2 (ou < 21, si > 70 ans)
Perte pondérale >10% depuis le Δ

Cessot Support Care Cancer 2011

DÉNUTRITION?

Nutrition = équilibre

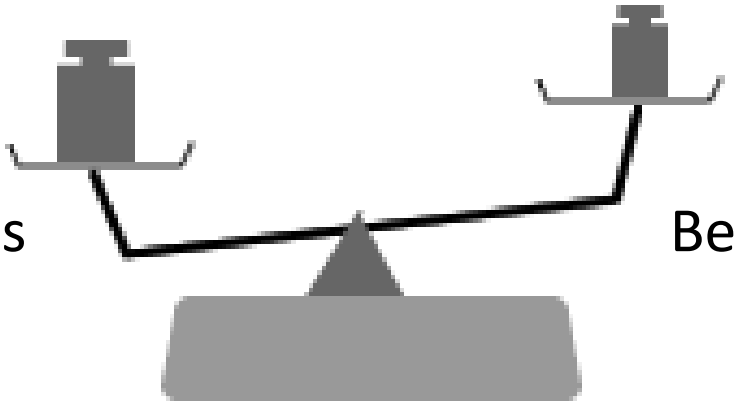
Apports alimentaires



Besoins en Energie

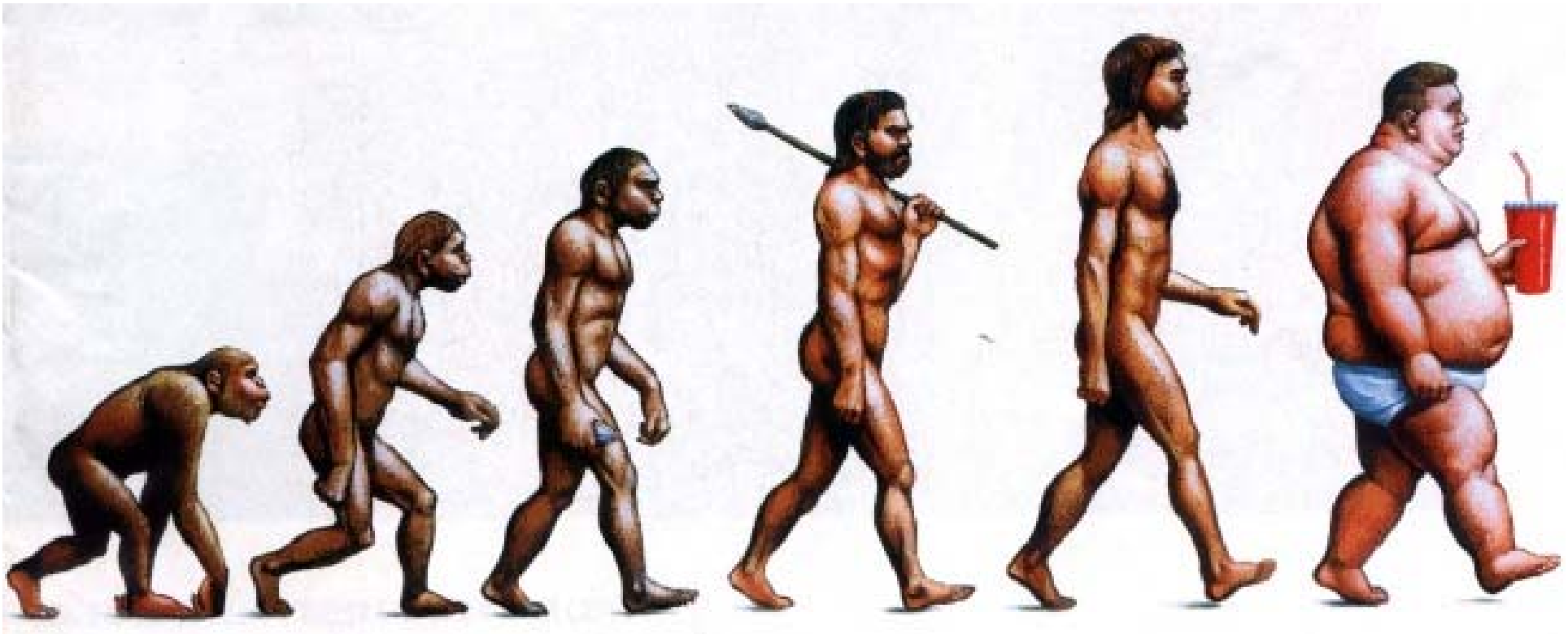
Malnutrition = déséquilibre

Apports alimentaires



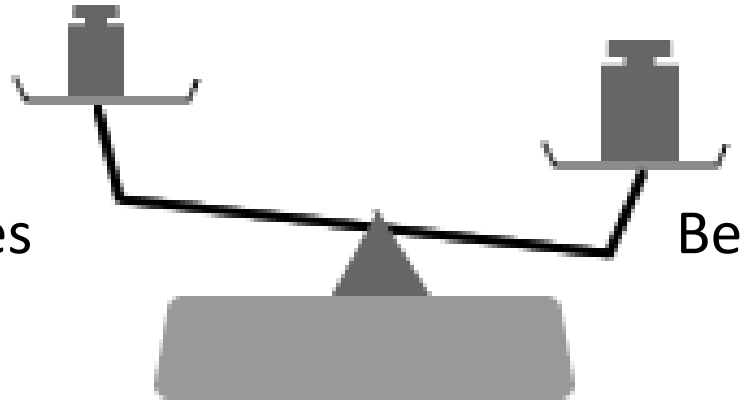
Besoins en Energie

DÉNUTRITION



Malnutrition = déséquilibre

Apports alimentaires



Besoins en Energie

SURNUTRITION

Définitions de la Société Française de Nutrition Entérale et Parentérale

	Âge < 70 ans		Âge ≥ 70 ans	
	Dénutrition modérée	Dénutrition sévère	Dénutrition modérée	Dénutrition sévère
Perte de poids	≥ 5 % en 1 mois ≥ 10% en 6 mois	≥ 10 % en 1 mois ≥ 15% en 6 mois	≥ 5 % en 1 mois ≥ 10% en 6 mois	≥ 10 % en 1 mois ≥ 15% en 6 mois
IMC (P/T^2)	≤ 18,5	≤ 16	< 21	< 18
Albumine	< 30 g/l	< 20 g/l	< 35 g/l	< 30 g/l
Mini Nutritional Assessment	-		≤ 17 (/30)	-

www.sfnep.org

IMPACT CLINIQUE

Perte pondérale

- Stomatite / Syndrome Mains-Pieds ($p < 0,00001$)
- Qualité de Vie / Performance status ($p < 0,00001$)
- Cures de chimiothérapie ($p < 0,00001$)
- Taux de réponse ($p < 0,006$)
- Survie sans Progression ($p<0,001$)
- Survie globale ($p < 0,00001$)

1555 patients / 6 ans / Cancers GI / Chimiothérapie

Andreyev Eur J Cancer 1998

Table 5 Factors independently associated with mortality

Risk factors	Odds ratio	95% CI	*P*-value
Presence of metastases	2.21	1.3–3.73	0.03
Palliation[a]	3.96	2.17–7.25	<0.001
Evaluation	2.80	1.38–5.69	0.004
Haematological malignancy	2.43	1.17–5.03	0.017
Gynaecological cancer	2.34	1.14–4.83	0.021
Lung cancer	2.85	1.37–5.93	0.005
WHO			
PS 2	2.19	1.18–4.05	0.013
PS 3	4.12	2.2–7.72	<0.001
PS 4	8.77	4.08–18.9	<0.001
Severe malnutrition	2.47	1.40–4.36	0.002
Age >70 years	2.01	1.21–3.34	0.007

Abbreviations: CI = confidence interval; PS = performance status; WHO = World Health Organisation. [a]All terminally ill patients were dead at 2-months of follow-up.

Mortalité

Pressoir, Br J Cancer 2010

Conséquences cliniques de la dénutrition

Chez les patients atteints de cancer, la perte de poids par rapport au poids antérieur altère le **pronostic**.

Une perte de poids de plus de **10% en chirurgie** et de plus de **5% en oncologie médicale** augmente le risque de survenue de complications, de toxicités de la chimiothérapie et de la radiothérapie, diminue la survie et altère la qualité de vie.

Recommandations Nationales Françaises

IMPACT DU SUPPORT NUTRITIONNEL?

Mortalité et dénutrition

Mortalité

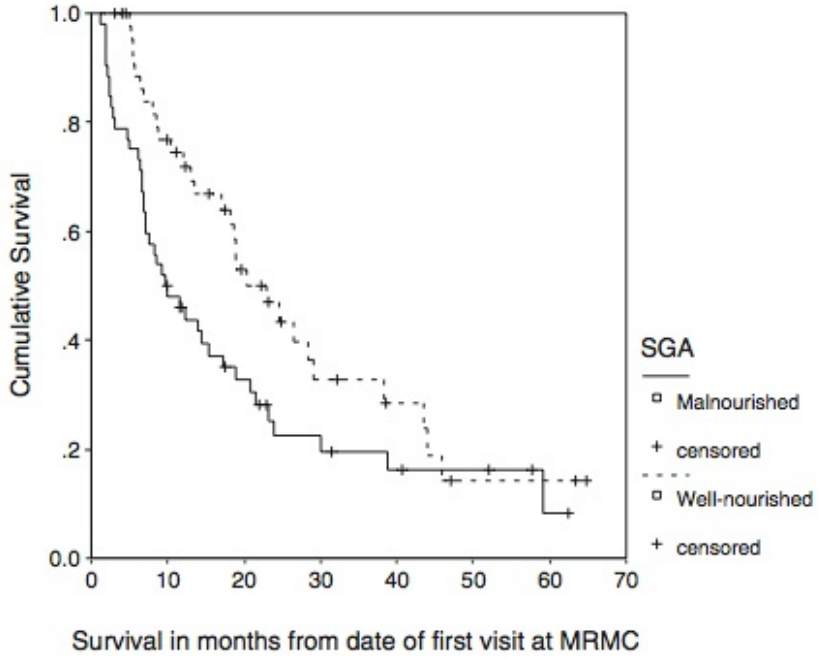


Fig. 1 Survival curves for two categories of SGA at baseline

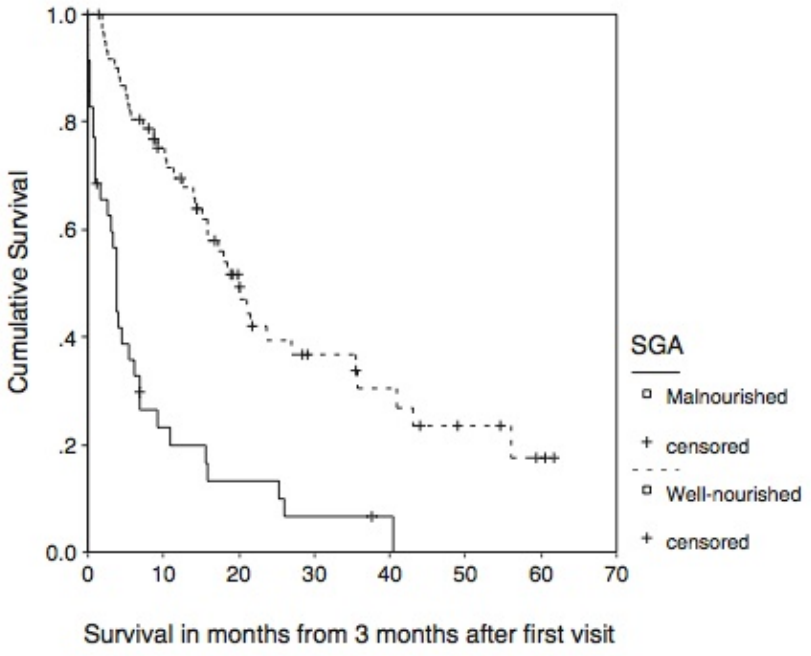
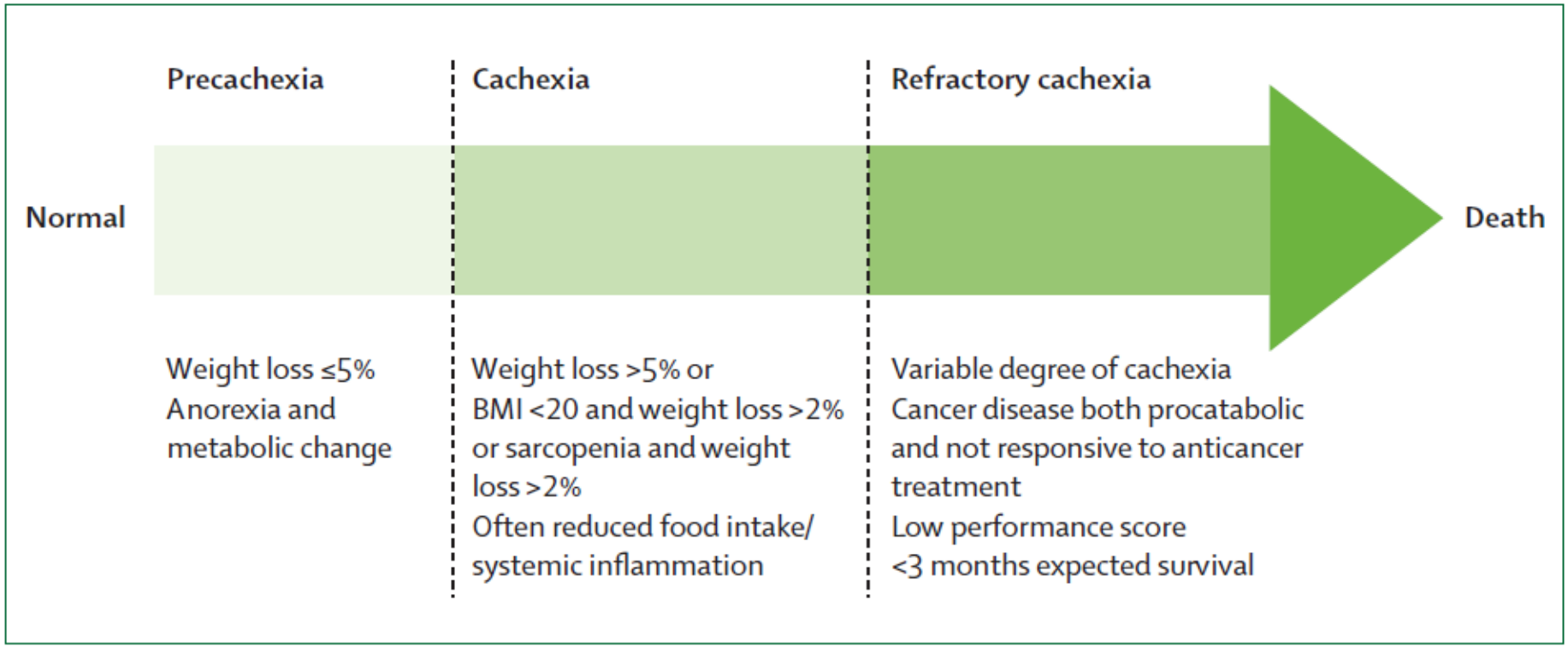


Fig. 2 Survival curves for two categories of SGA at 3 months

98 cancers ovariens, rétrospectif

Gupta D Support Care Cancer 2010



Fearon, Lancet Oncol 2011

Fearon, Lancet Oncol 2011

Panel: Diagnosis of cancer cachexia

- Weight loss >5% over past 6 months (in absence of simple starvation); or
- BMI <20 and any degree of weight loss >2%; or
- Appendicular skeletal muscle index consistent with sarcopenia (males <7·26 kg/m²; females <5·45 kg/m²)* and any degree of weight loss >2%†

*Defined reference values (sex-specific) and standardised body composition measurements are essential to undertake assessment of skeletal muscle depletion. Although there is a paucity of reference values related to cancer-specific outcomes,[29,30] a generally accepted rule is an absolute muscularity below the 5th percentile. This can be assessed as follows: mid upper-arm muscle area by anthropometry (men <32 cm², women <18 cm²);[31] appendicular skeletal muscle index determined by dual energy x-ray absorptiometry (men <7·26 kg/m²; women <5·45 kg/m²);[32] lumbar skeletal muscle index determined by CT imaging (men <55 cm²/m²; women <39 cm²/m²);[33] whole body fat-free mass index without bone determined by bioelectrical impedance (men <14·6 kg/m²; women <11·4 kg/m²).[34] †A direct measure of muscularity is recommended in the presence of fluid retention, a large tumour mass, or obesity (overweight).

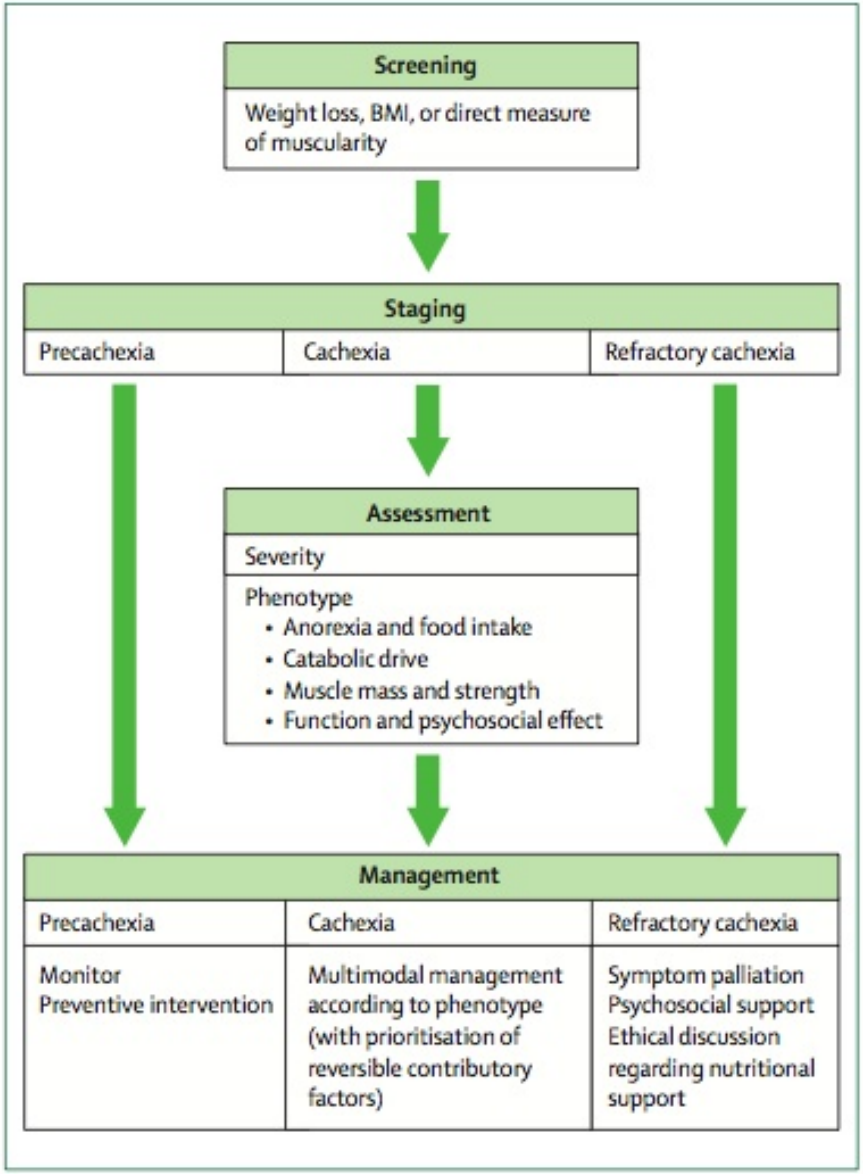
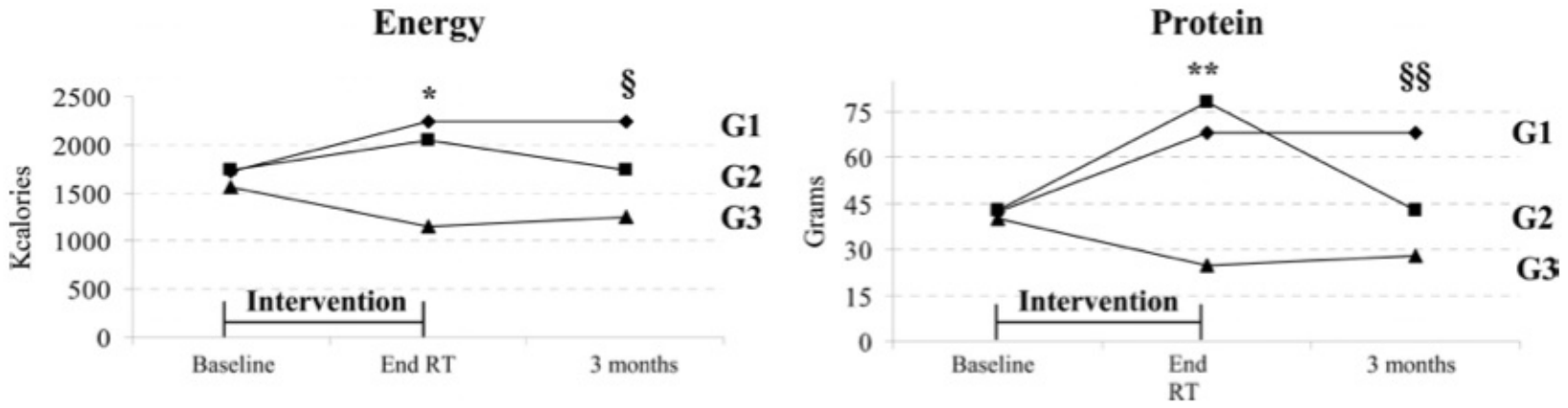


Figure 3: **Management algorithm for cancer cachexia**
Patients should be screened for cachexia, then undergo detailed assessment. All patients require optimum oncological and general medical management. Once patients with cachexia have been phenotyped, a detailed multimodal management plan (including nutrition, exercise, anti-inflammatory strategies, and other adjuncts) can be established. BMI=body-mass index.

Fearon, Lancet Oncol 2011

Impact of nutrition on outcome: a prospective randomized controlled trial in patients with head and neck cancer undergoing radiotherapy



G1: conseils diététiques
G2: régime habituel + CNO
G3: Ad libitum

Ravasco Head & Neck 2005

Impact of nutrition on outcome: a prospective randomized controlled trial in patients with head and neck cancer undergoing radiotherapy

Table 2. Changes in nutritional status during RT and at 3 months as determined by PG-SGA.

	G1				G2				G3					
	Decline		Maintained/ improved		Decline		Maintained/ improved		Decline		Maintained/ improved			
Method	End RT	3 months	End RT	3 months	End RT	3 months	End RT	3 months	End RT	3 months	End RT	3 months	p^1	p^2
PG-SGA	5	3	20	22	19	24	6	1	24	25	1	0	<.002	<.001

Abbreviations: RT, radiotherapy; G1, group 1 (dietary counseling based on regular foods); G2, group 2 (supplements); G3, group 3 (ad lib); PG-SGA, Ottery's Patient Generated Subjective Global Assessment.
Note. Data are expressed as number of patients; NS = not significant; p^1 expresses the significance of statistical differences between intervention groups, regarding nutritional decline both at the end RT and at 3 months; p^2 expresses the significance of statistical differences between intervention groups, regarding maintenance/improvement of nutritional status at the end RT and at 3 months.

G1: conseils diététiques
G2: régime habituel + CNO
G3: Ad libitum

Ravasco Head & Neck 2005

Nutrition & Radio-chimiothérapie

Table 3. RT-Induced Morbidity Categorized According to Severity Grades[12]

	G1				G2				G3						
	Grade 1		Grade 2		Grade 1		Grade 2		Grade1		Grade 2				
Symptoms	End RT	3 Months	End RT	3 Months	End RT	3 Months	End RT	3 Months	End RT	3 Months	End RT	3 Months	*P**	*P*†	*P*‡
Anorexia	20	6	13	1	19	5	14	3	17	12	17	10	< .02	< .01	< .001
Nausea or vomiting	27	0	7	0	23	7	10	3	18	9	16	6	< .001	.17	< .0001
Diarrhea	32	0	2	0	25	9	9	3	18	15	17	13	< .0001	< .05	< .0001

NOTE. Data are expressed as number of patients; grades 3 and 4 were never observed.
Abbreviation: RT, radiation therapy.
*Expresses the significance of statistical differences between intervention groups, regarding the reduction of grade 1 symptom incidence between the end of RT and 3 months.
†Expresses the significance of statistical differences between intervention groups, regarding the reduction of grade 2 symptom incidence between the end of RT and 3 months.
‡Expresses the significance of statistical differences between intervention groups, regarding the reduction of grades 1 + 2 symptom incidence between the end of RT and 3 months.

Ravasco J Clin Oncol 2005

Survie et dénutrition

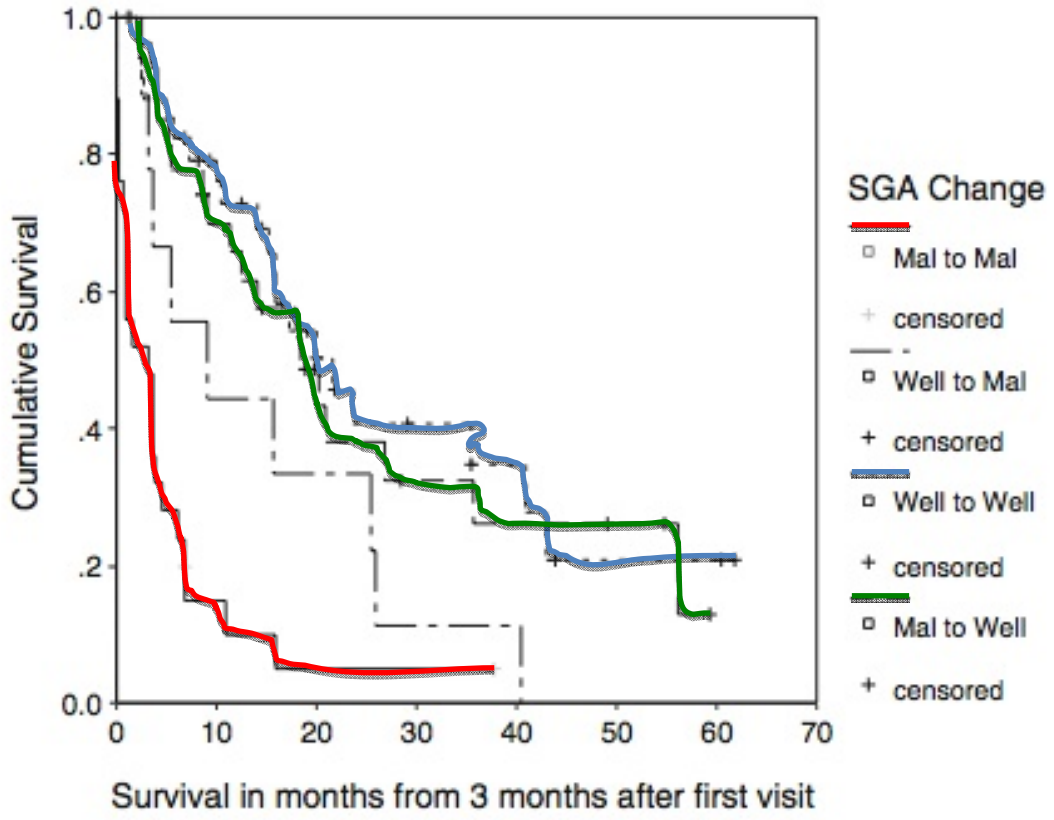


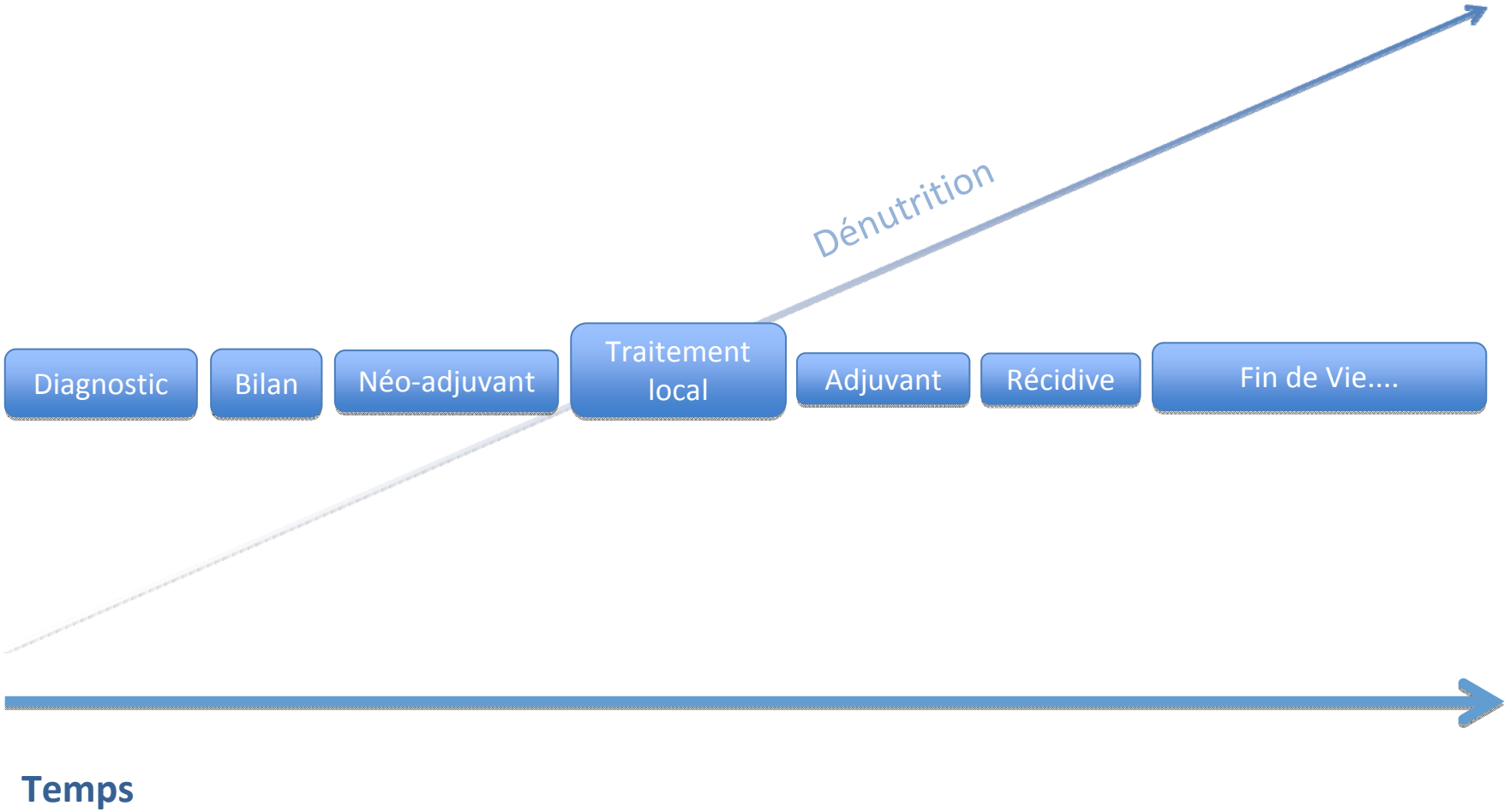
Fig. 3 Survival curves for four categories of SGA change

98 cancers ovariens, rétrospectif

Gupta D Support Care Cancer 2010

PARCOURS D'UN PATIENT ONCOLOGIQUE ET DÉVELOPPEMENT DE LA CACHEXIE

Dénutrition du patient cancéreux...



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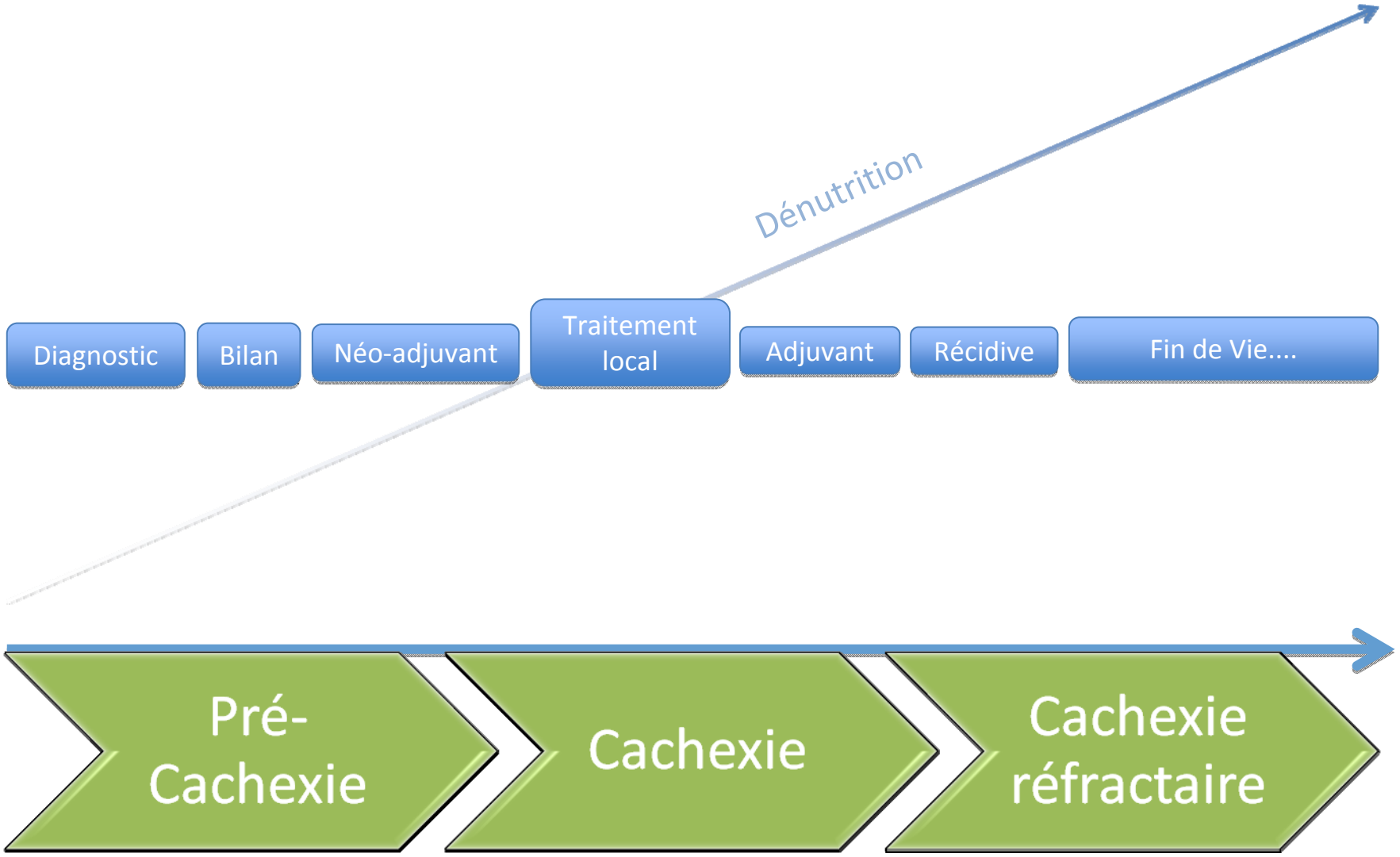

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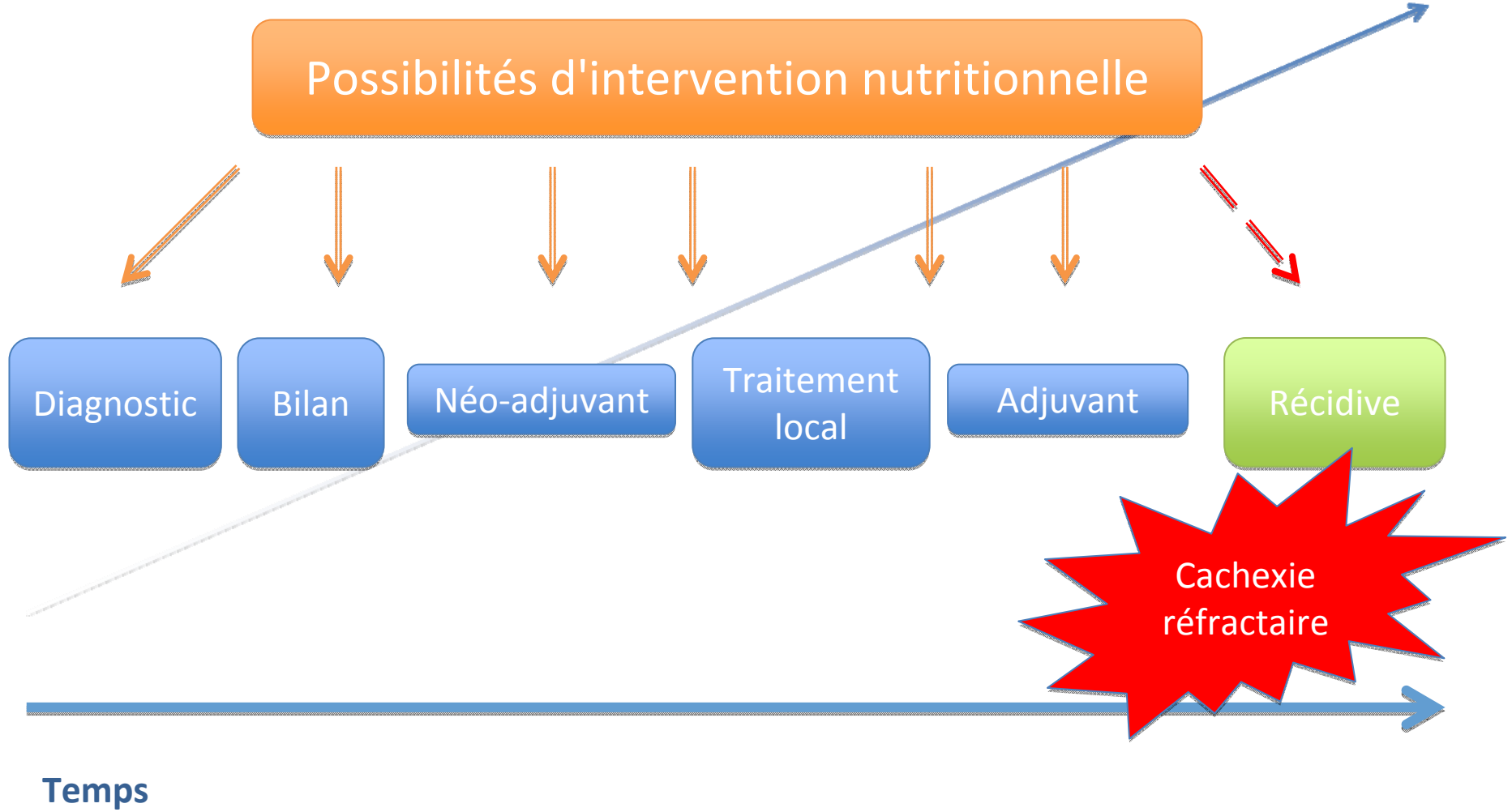

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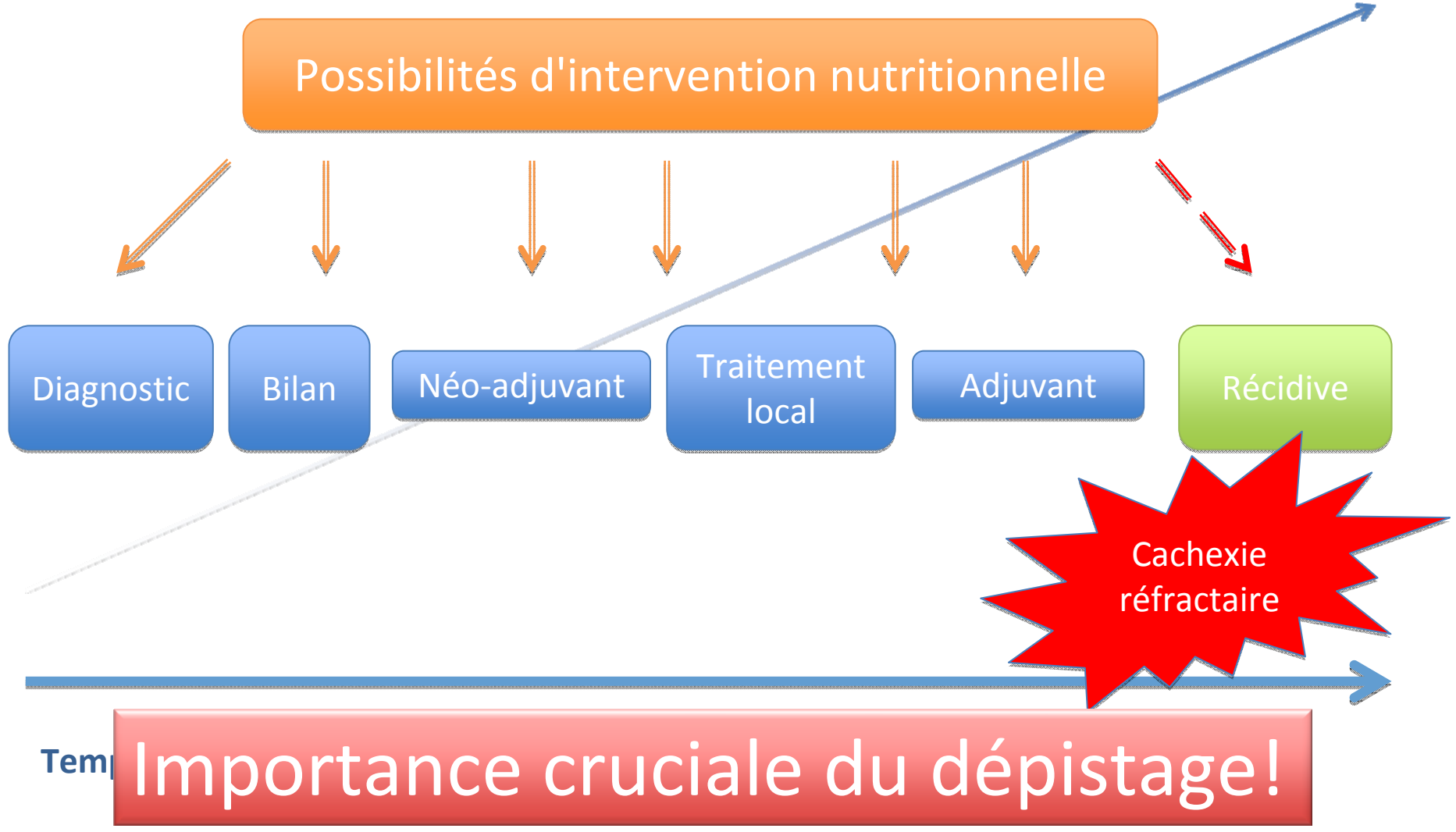


Importance cruciale du dépistage!

QUELQUES RECOMMANDATIONS

NUTRITION PARENTÉRALE

ESPEN Guidelines ESPEN Guidelines on Parenteral Nutrition: Non-surgical oncology

1. PN is ineffective and probably harmful in non-aphagic oncological patients in whom there is no gastrointestinal reason for intestinal failure.
2. PN is not recommended if oral/enteral nutrient intake is adequate.

   (Inadequate intake: <60% of estimated energy expenditure is anticipated for more than 10 days.)
3. The routine use of PN during chemotherapy, radiotherapy or combined therapy is not recommended

Clin Nutr 2009

PÉRI-OPÉRATOIRE

Renutrition pré-opératoire

	Patient	Durée	Chirurgie	Commentaires	
ESPEN	Dénutrition sévère	10-14 J.	Majeure	NE > NP	Même si chirurgie doit être post-posée
ASPEN	Dénutrition modérée ou sévère	7-14 J.	ns		Post-poser la chirurgie si possible
SFNEP /SFAR	GN4	7-10 J.	Morbidité élevée	NE > NP	

Ann Fr Anesth Reanim 2011
JPEN 2009
Clin Nutr 2006

Renutrition pré-opératoire: parentérale?

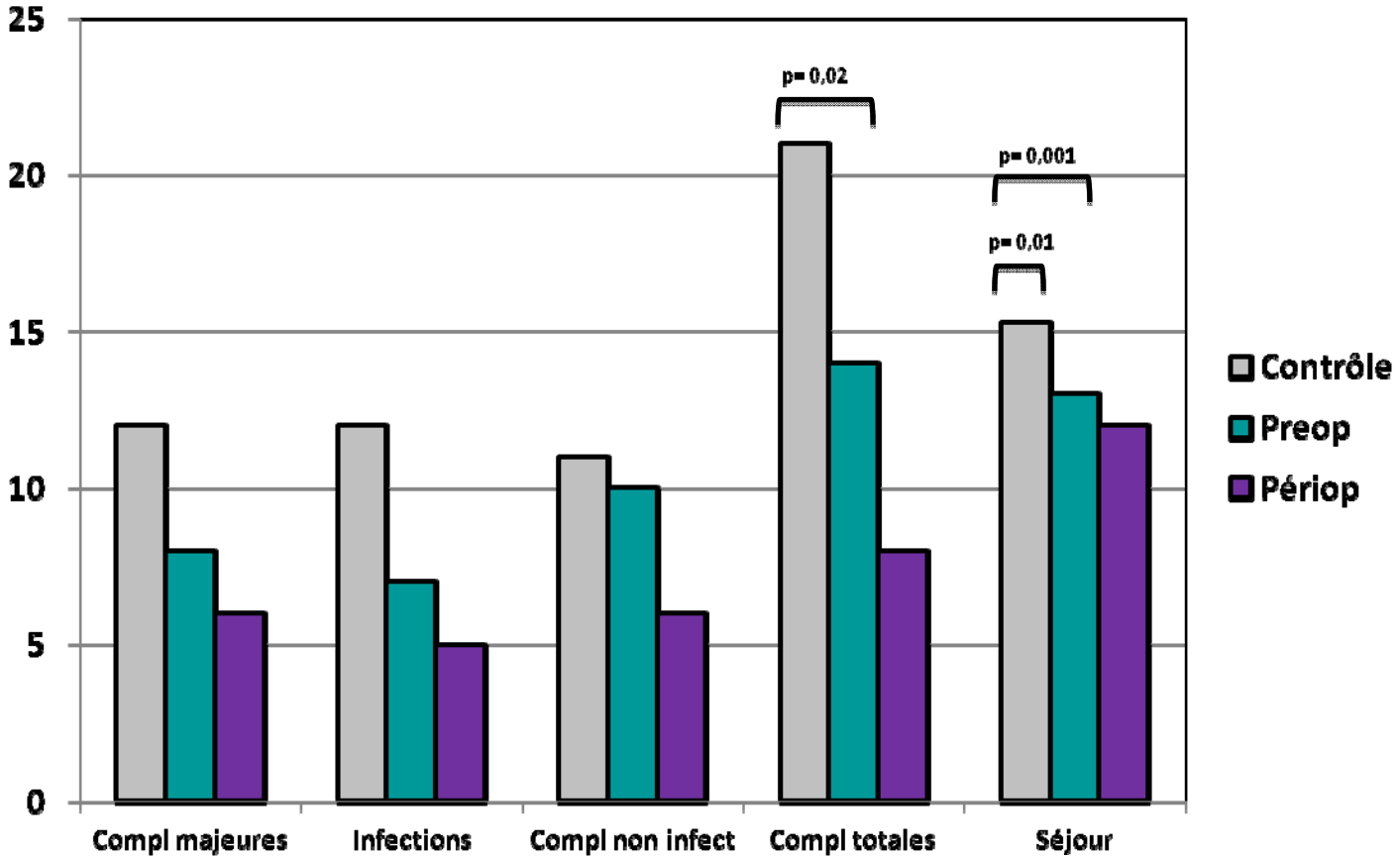
1. Peri-operative PN is recommended in malnourished candidates for artificial nutrition, when EN is not possible.
2. Peri-operative PN should not be used in the well-nourished.

Clin Nutr 2009

IMMUNONUTRITION

En chirurgie oncologique digestive

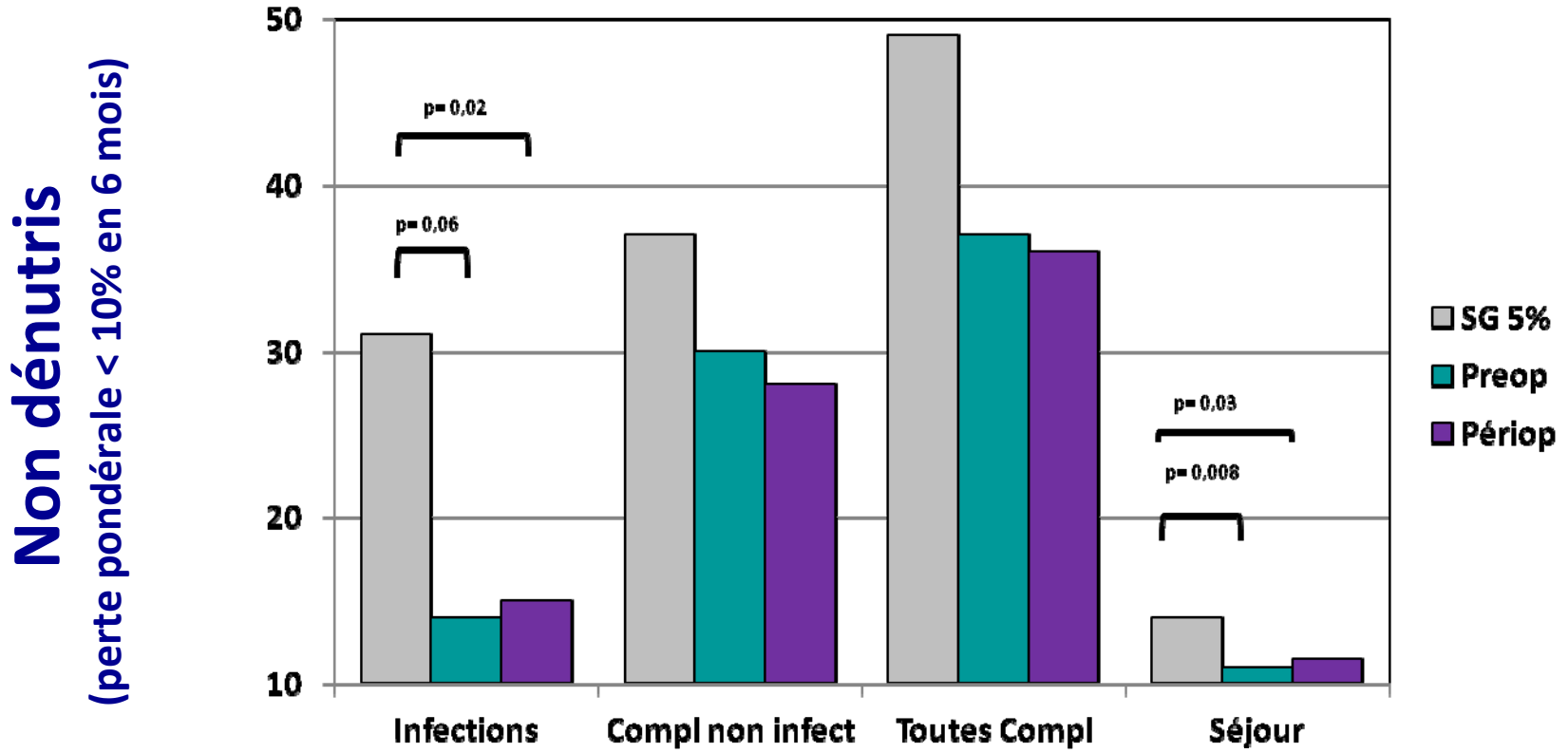
Dénutris
(Perte pondérale ≥ 10% en 6 mois)



NE post-opératoire
Impact ® pré-opératoire
Impact ® péri-opératoire

Braga et al., Arch Surg 2002

En chirurgie oncologique digestive



G5%

Impact ® pré-opératoire

Impact ® pré- et post-opératoire

Gianotti et al., *Gastroenterology* 2002

Renutrition pré-opératoire

	Patient	Durée	Chirurgie
ESPEN	Tous les patients	Pré-op	Digestive ORL
ASPEN	Dénutris	Pré-op	Digestive ORL
SFNEP/SFAR	Tous les patients	Pré-op	Digestive

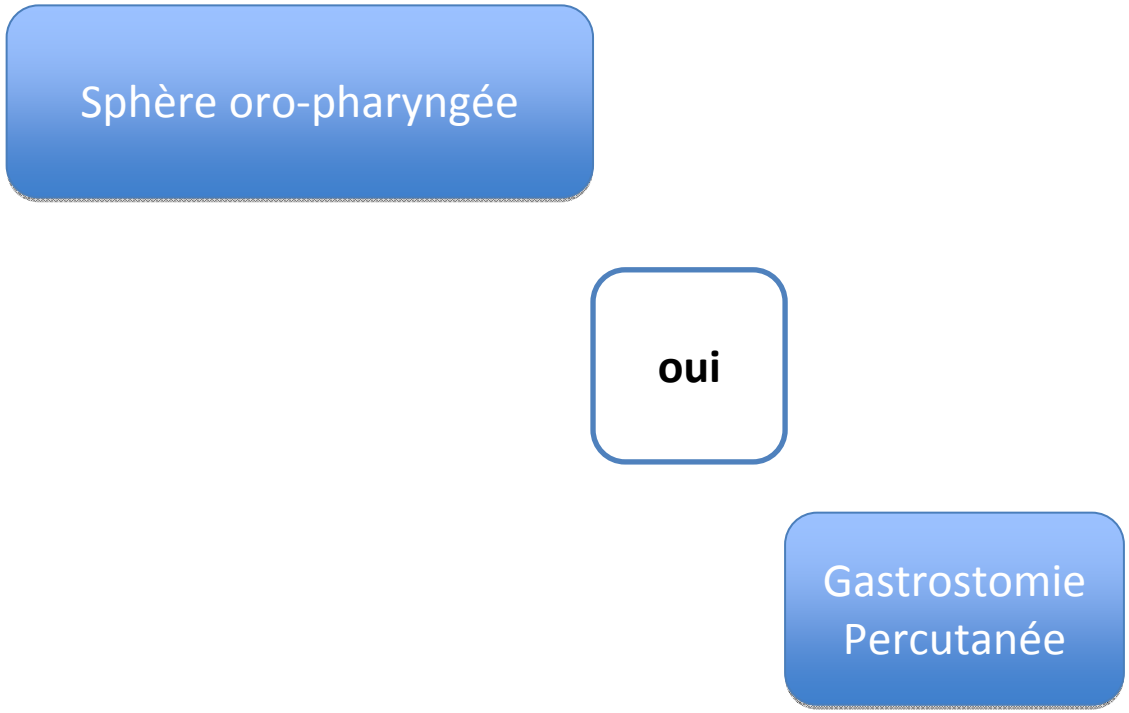
Ann Fr Anesth Reanim 2011
JPEN 2009
Clin Nutr 2006

RADIOTHÉRAPIE
&
RADIO-CHIMIOTHÉRAPIE

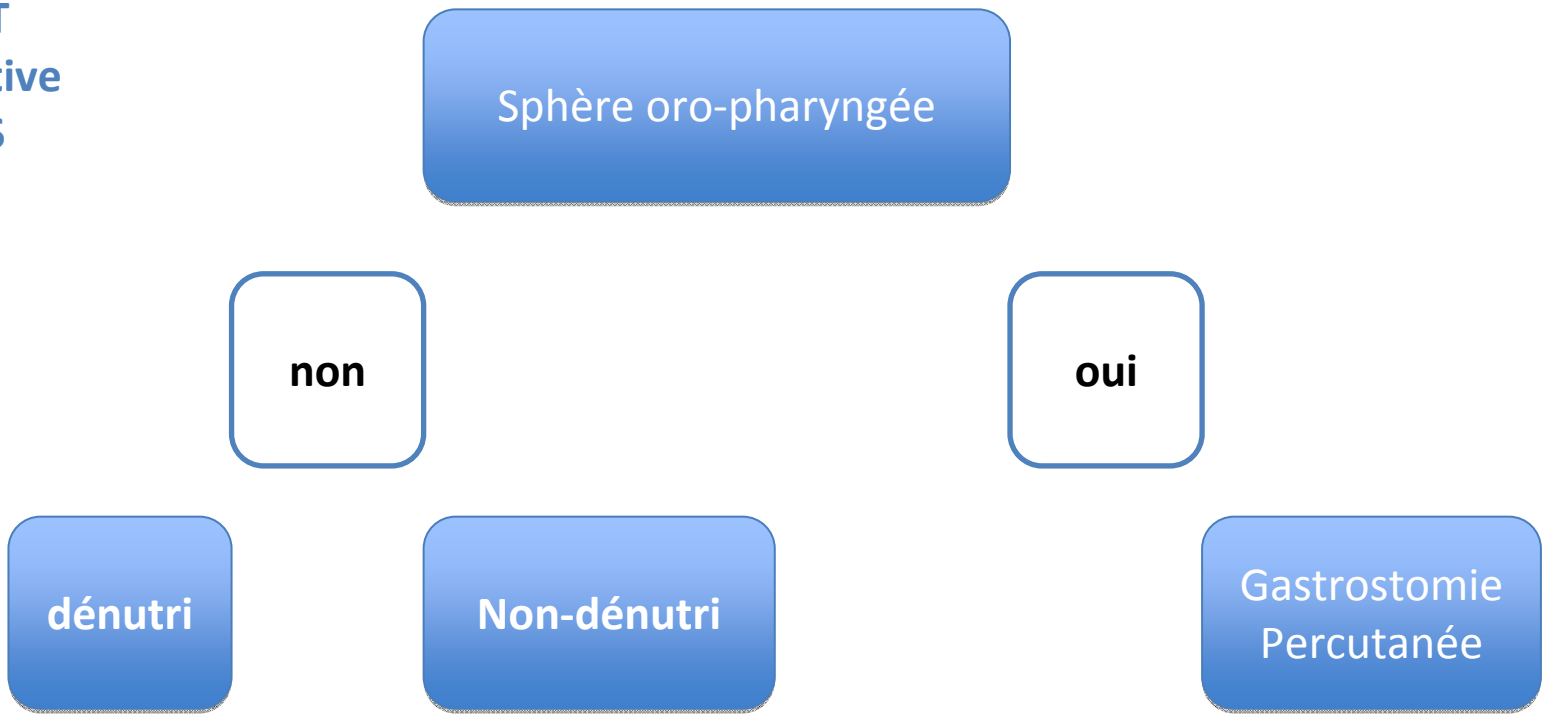
RT-CT
Curative
VADS

Sphère oro-pharyngée

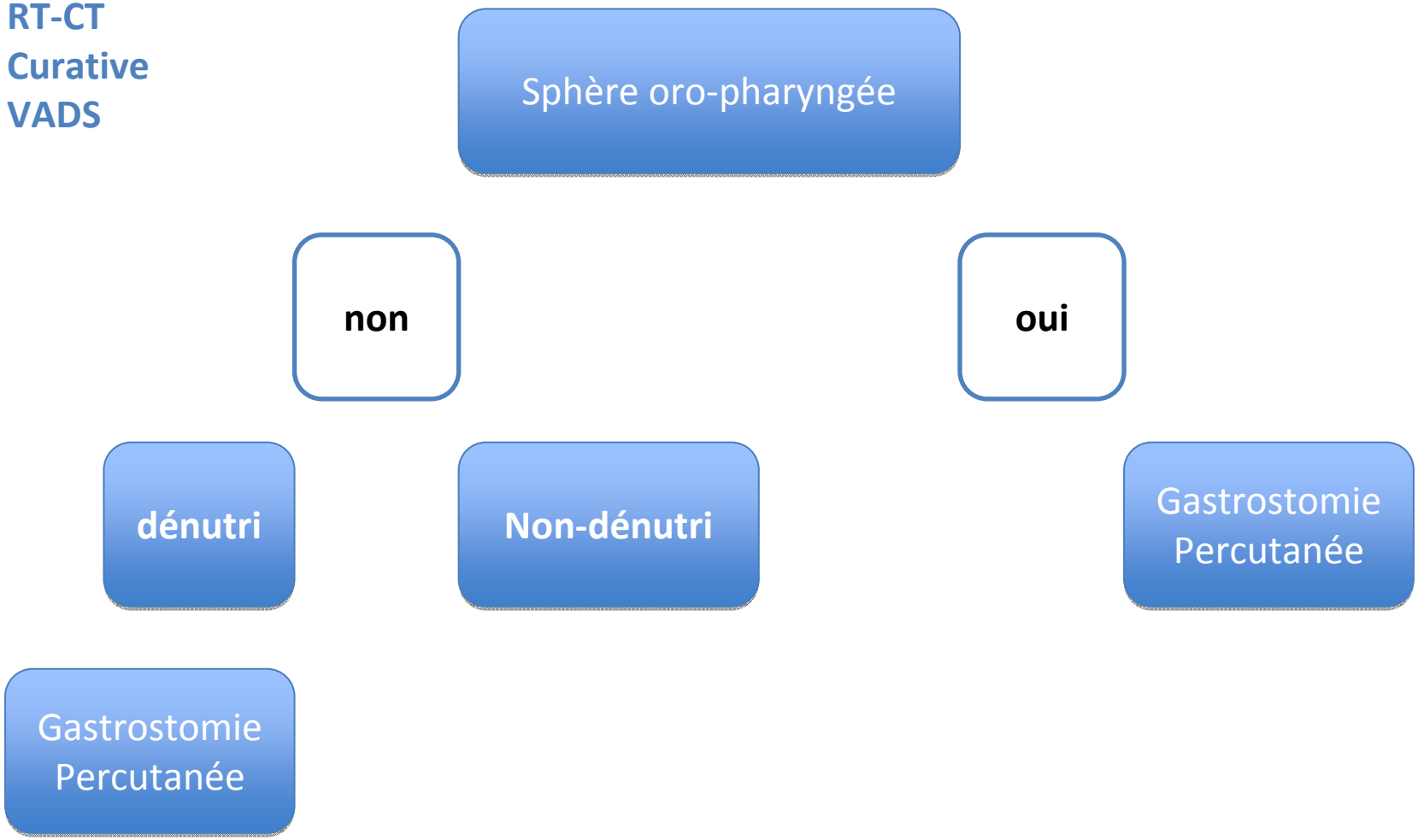
RT-CT
Curative
VADS



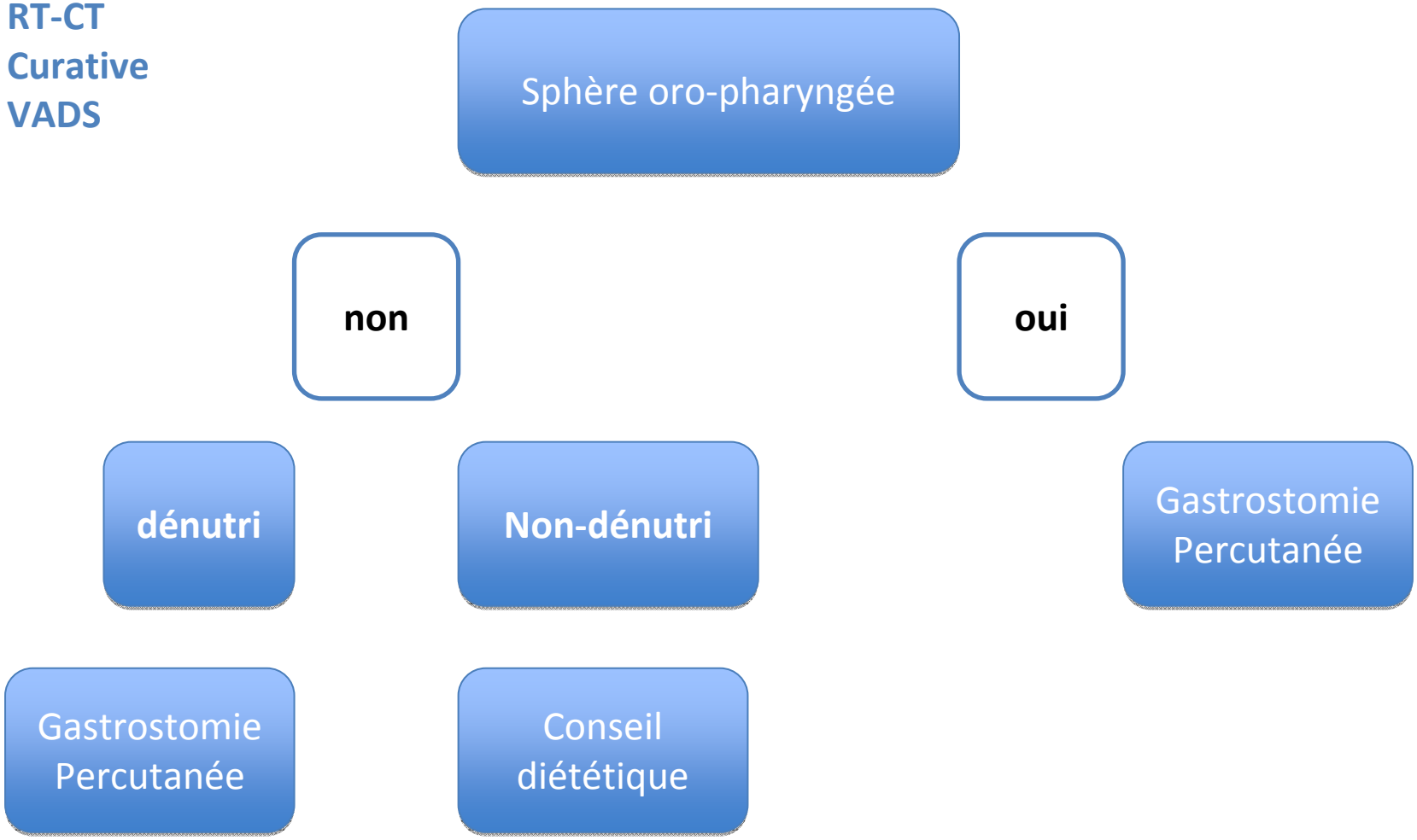
RT-CT
Curative
VADS



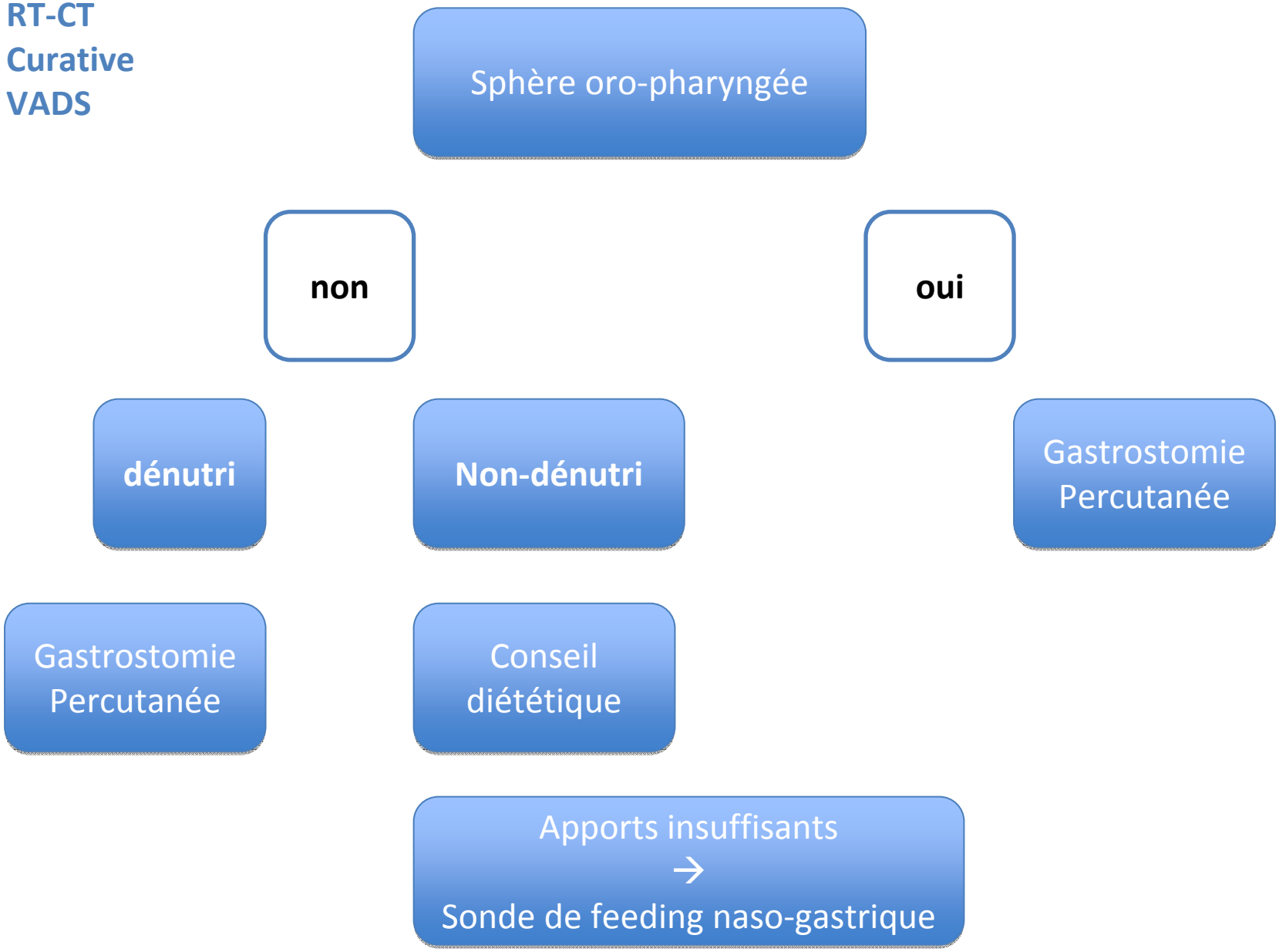
RT-CT
Curative
VADS



RT-CT
Curative
VADS



RT-CT
Curative
VADS



Recommandations Françaises Nutrition & Cancer

RT seule

VADS

1. Conseil diététique
2. Sonde naso-gastrique (si apports oraux insuffisants).

ANOREXIE?

Support pharmacologique

Steroids or progestins are recommended in order to enhance appetite (prevention of weight loss), modulate metabolic derangements, and prevent impairment of quality of life in cachectic patients.

ESPEN Guidelines on Enteral Nutrition, Clin Nutr 2006

Il n'est pas recommandé, en cas d'anorexie, d'utiliser systématiquement des médicaments orexigènes.

En situation palliative ou palliative avancée, **si** la perte de poids est préjudiciable au projet de vie ou si l'hypophagie est une plainte caractérisée du patient, il est recommandé de mettre en place un traitement orexigène en parallèle des mesures diététiques et de la complémentation nutritionnelle orale.

Recommandations Françaises Nutrition & Cancer

Support pharmacologique

En cas d'indication retenue à la prescription d'orexigènes, il est recommandé d'utiliser :

- l'acétate de mégestrol (Megace®) ou l'acétate de médroxyprogestérone (Provera®)
  - traitement de moyenne durée (2 à 3 mois)
  - Posologie: Megace: 160-480 mg/jour – Provera: 500 à 1000 mg/j.
  - Augmente la prise alimentaire de 30%
  - Augmente la masse grasse
  - ES: maladie thrombo-embolique / caractères sexuels secondaires
- Prednisolone
  - en traitement de courte durée (2 à 4 semaines)
  - dose initiale entre 30 et 60 mg/jour (0,5 à 1 mg/kg/jour)
- Dexaméthasone (4 à 8 mg/jour)
- Thalidomide? Gut 2005 Cancer Pancréas

GREFFE DE MOELLE

ESPEN Guidelines

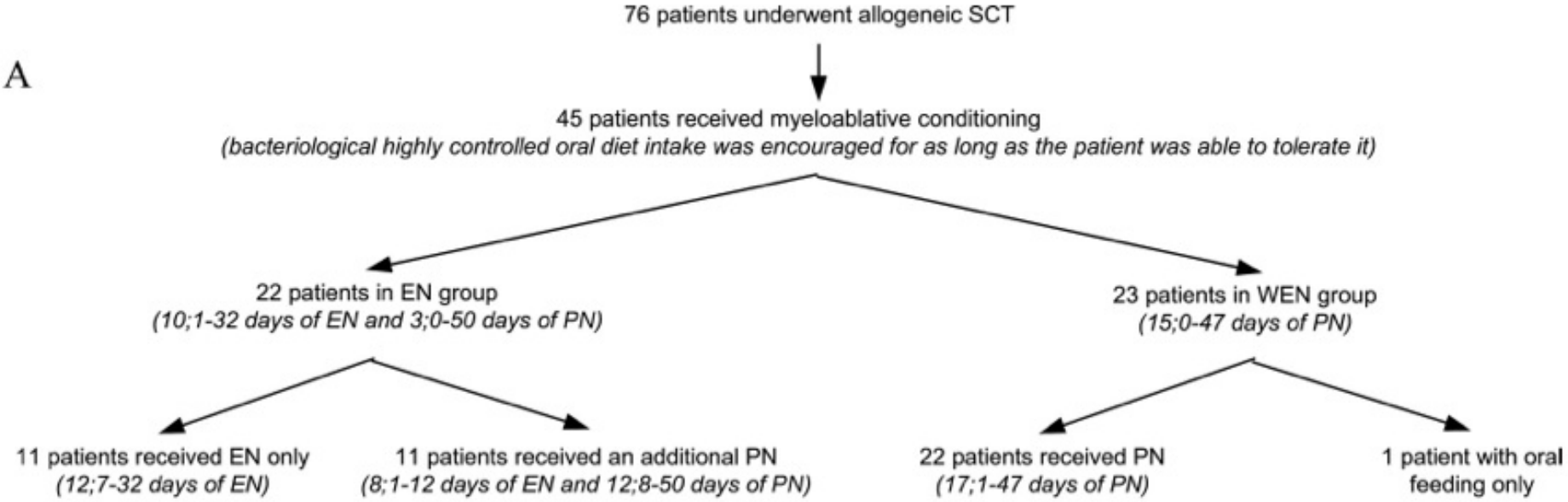
Pas de support nutritionnel entéral en routine car pas de preuve d'effets sur:

- La réponse tumorale
- Les effets secondaires liés aux traitements
- La survie
- Le taux de maladie du greffon contre contre l'hôte

Clin Nutr 2006

Seguy, Transplantation, 2006

A



EN: enteral nutrition; WEN: without enteral nutrition; PN: parenteral nutrition.

Seguy, Transplantation, 2006

- Maladie du greffon contre l'hôte III/IV: 18% vs 35% ($p < 0.011$)
- Moins de mortalité infectieuse à 100 jours
- Analyse multi-variée, Nutrition entérale = seul facteur influençant la survie à 100 jours
- Données confirmées sur un échantillon de 121 patients allogreffés. (Transplantation 2012)

Equipe de Support Nutritionnel