PLACE DE LA REANIMATION CHEZ LES PATIENTS EN ONCO-HEMATOLOGIE

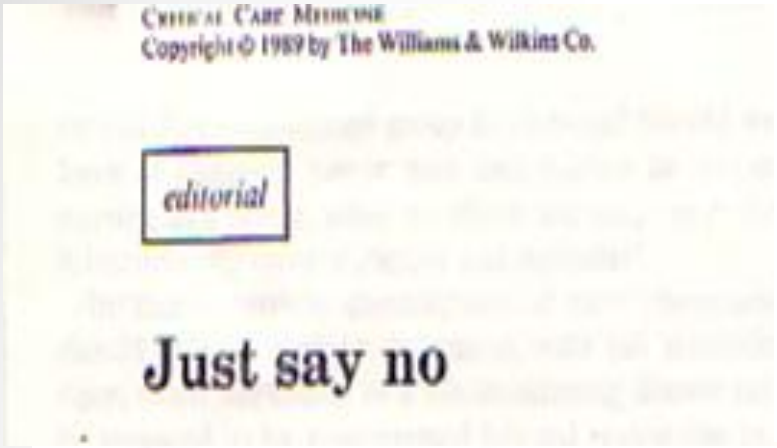
Dr BEN ABDENNEBI Yosr
Service Hématologie Clinique Hôpital Aziza Othmana

Il y a 20 ans…

Mauvaise réputation des patients d'onco-hématologie en réanimation

- **Mauvais pronostic suspecté des maladies malignes**
  « Ca ne vaut pas le coup »
- **Mauvais pronostic en réanimation, mortalité élevée**
  Lloyd-Thomas AR. BMJ 1988
  Brunet F. Intensive Care Med 1990
- **Situations cliniques mal connues des réanimateurs**
- **Charge de travail lourde, coût élevé**

Il y a 20 ans...


Critical Care Medicine
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editorial

Just say no

Carlon GC. *CritCareMed* 1989;17:106-7

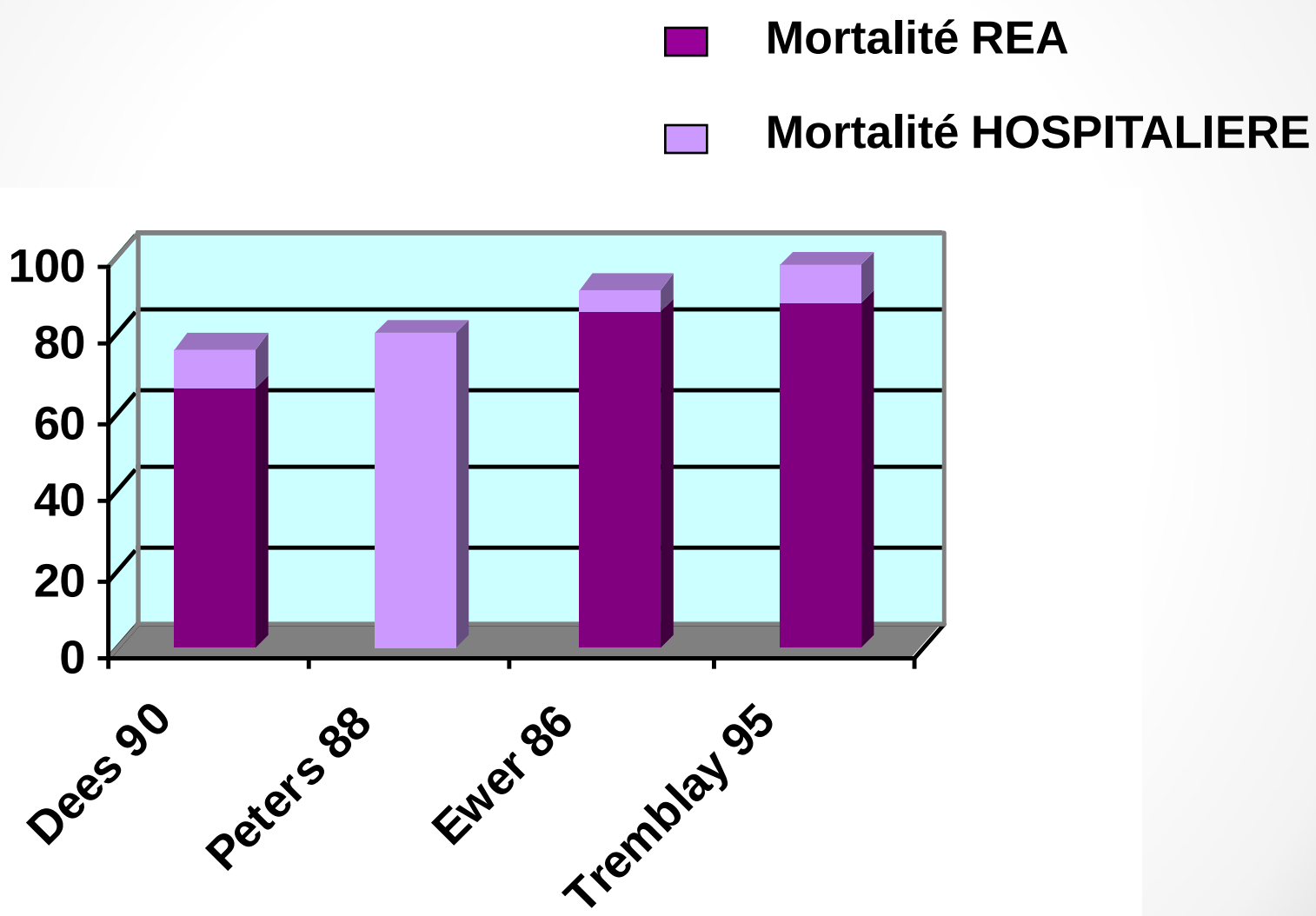
Everything that *Should* Be Done—Not Everything that *Can* Be Done

Schuster D.P. ***Am Rev Respir Dis*** **1992;145:508-9**

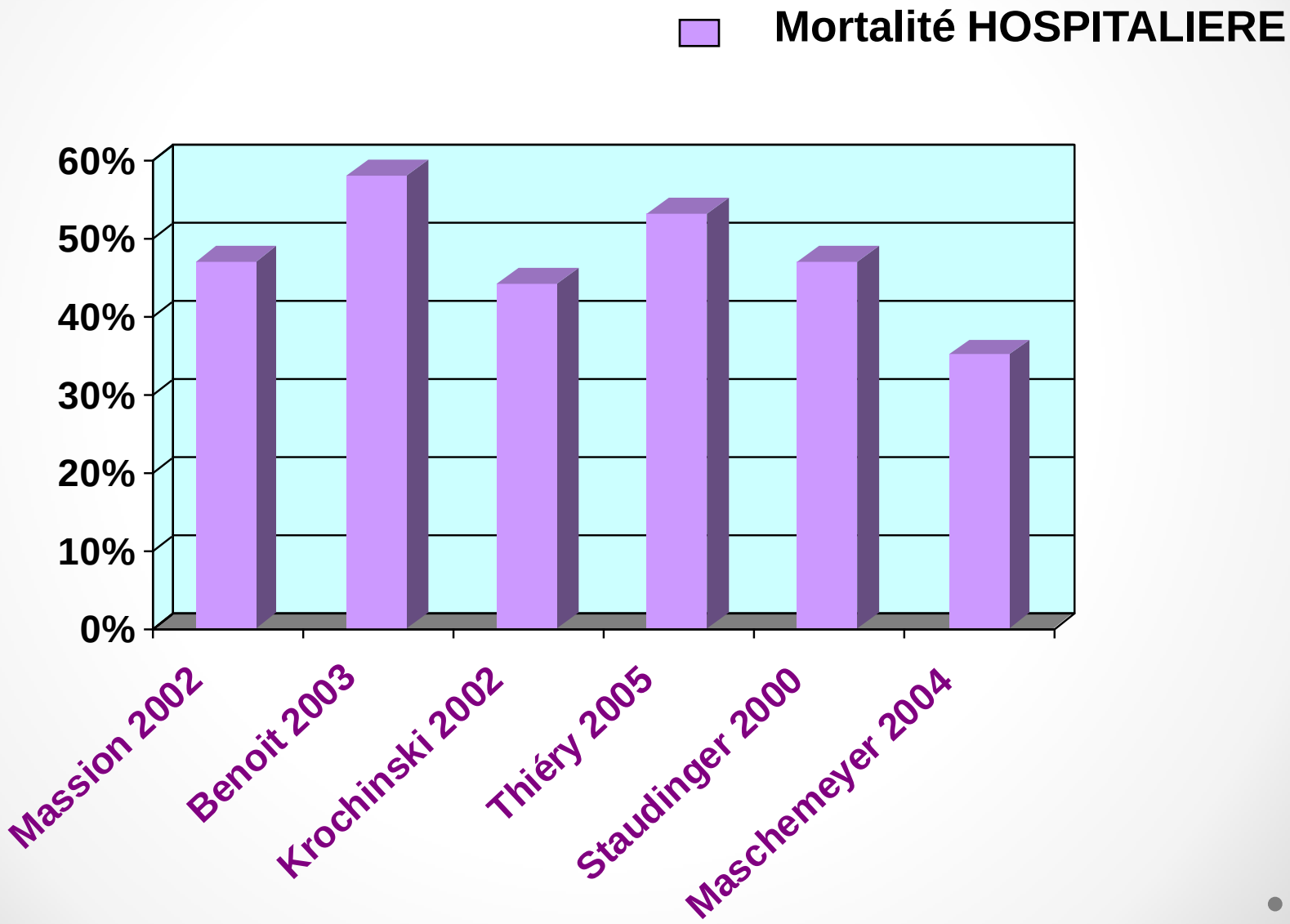
Is Intensive Care Unit Justified for Patients with Hematological Malignancies?

Brunet F. ***Intensive Care Med 1990***

Il y a 20 ans: patients OH ventilés

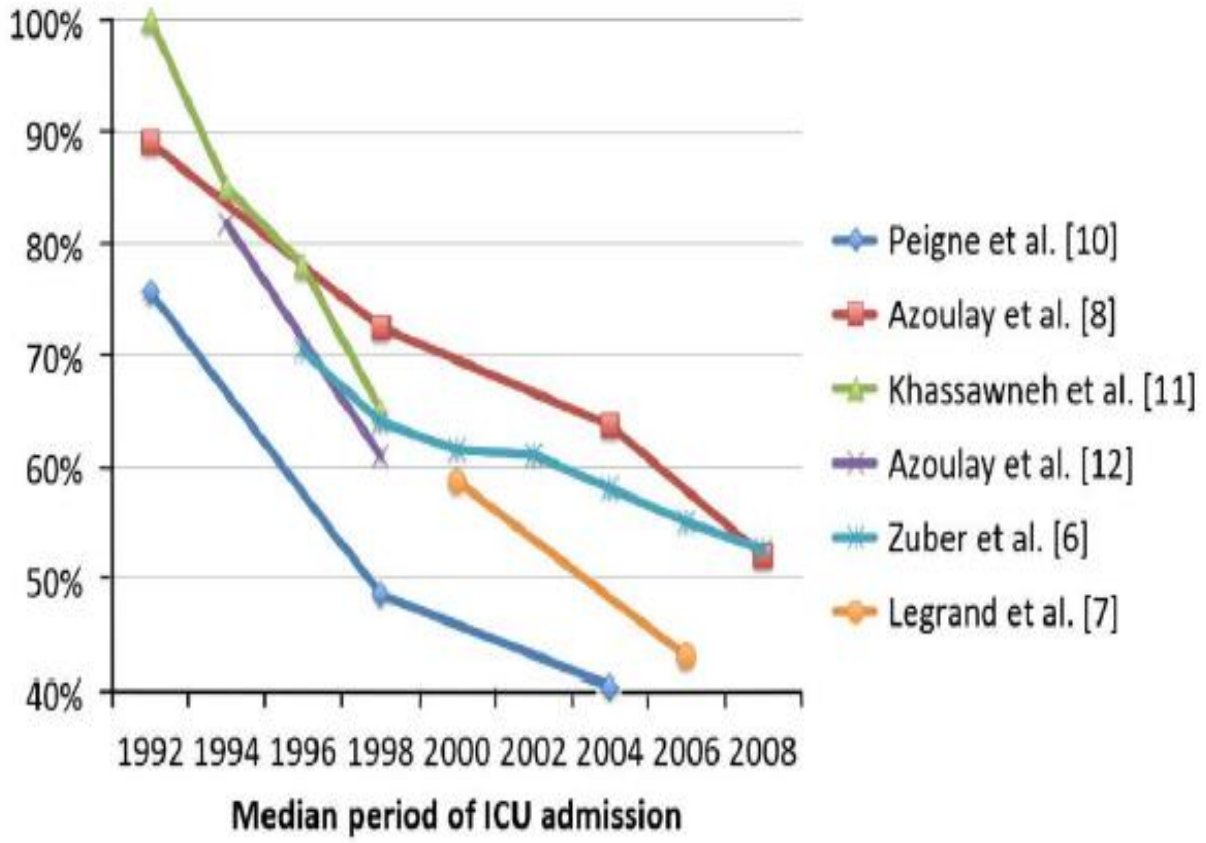


Mortalité depuis 2000

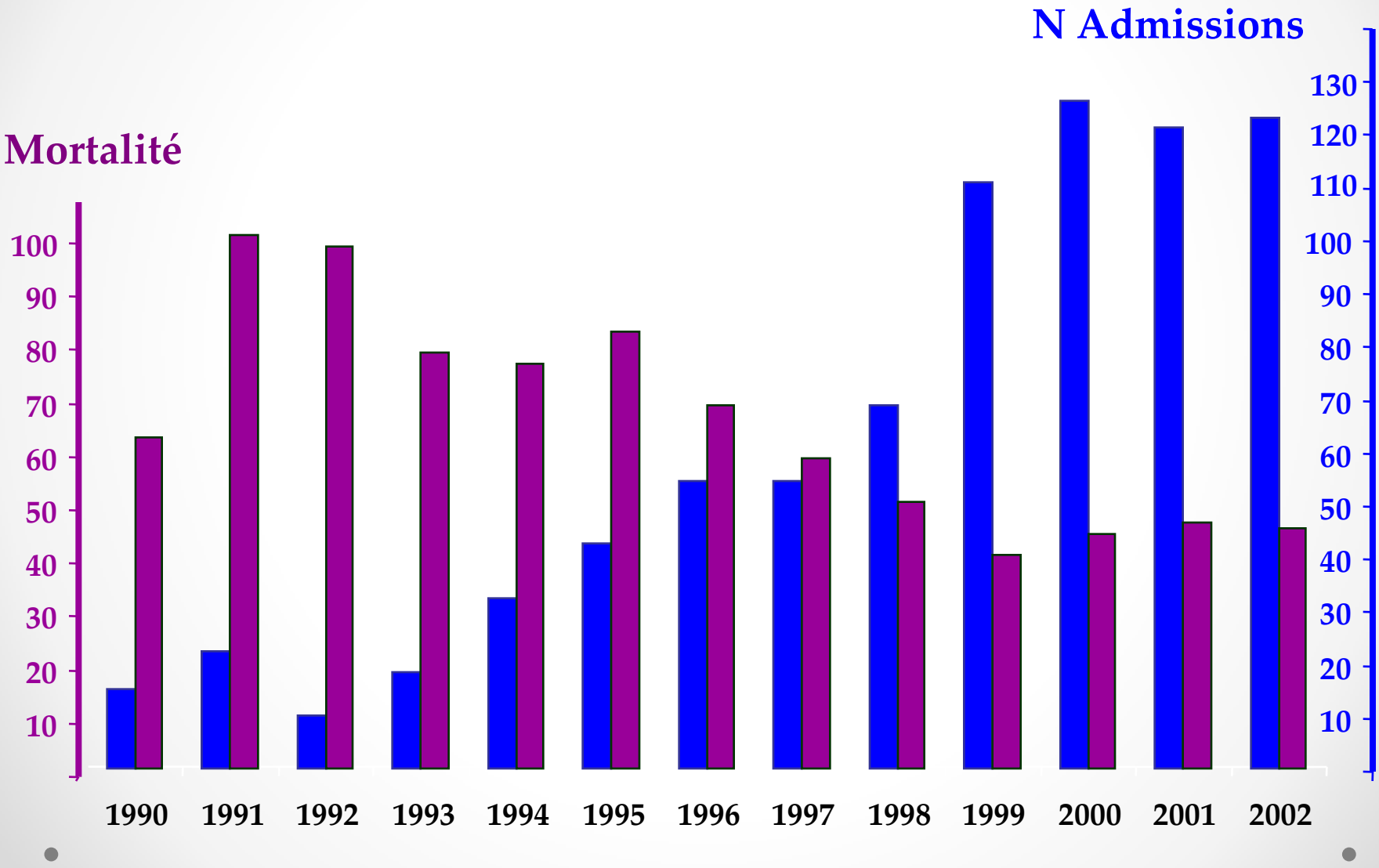


Evolution du pronostic des POH en milieu de réanimation

Fig. 1 Sequential change in hospital mortality according to median period of ICU admission in critically ill cancer patients [6–8, 10–12]



Expérience St Louis: 1990 - 2002



Ce qui a changé: L'amélioration du pronostic

- Amélioration du pronostic en hématologie et en oncologie
  - Nouvelles molécules de chimiothérapie
  - Nouveaux protocoles
  - « supportive care »
- Amélioration de la sélection des patients: Stratégie d'admission
  - Réflexions en amont (hématologues et oncologues)
  - Réanimateurs moins « réticents »
  - Meilleure identification des patients pouvant bénéficier de la réanimation
  - Projet thérapeutique
- Amélioration du pronostic en réanimation
  - Prise en charge précoce

Song et al. Int Care Med 2012, 38

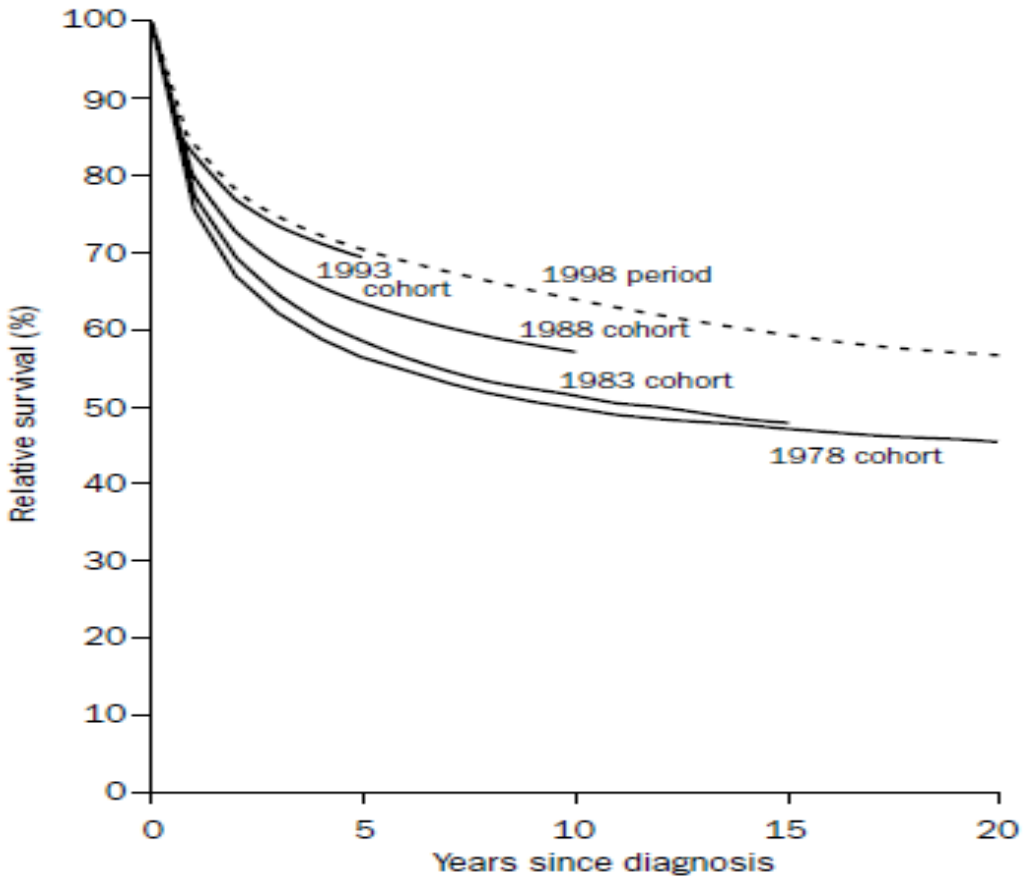
  - Méthodes thérapeutiques et diagnostiques non invasives (VNI…)

Azoulay et al. AJRCCM 2010, 182, Hilbert et al. NEJM 2001, 344, ARDS Network. NEJM 2000, 342

  - Amélioration de la prise en charge du choc Septique, Remplissage et antibiothérapie précoce

Rivers et al. NEJM 2001, 345 ; Dellinger et al. Crit Care Med 2004, 32

Evolution du pronostic des POH



20-year period-based and 5-year, 10-year, 15-year, and 20-year cohort-based relative survival curves

Most recent curves derived from SEER 1973–98 database,[12] including all ethnic groups, both sexes, and all cancer sites apart from lung and bronchus.

THE LANCET • Vol 360 • October 12, 2002 • www.thelancet.com

Long-term survival rates of cancer patients achieved by the end of the 20th century: a period analysis

Hermann Brenner

Summary

Background Long-term survival rates for many types of cancer have substantially improved in past decades because of advances in early detection and treatment. However, much of this improvement is only seen many years later with traditional cohort-based methods of survival analysis. I aimed to assess achievements in cancer patients' survival by an alternative method of survival analysis, known as period analysis, which provides more up-to-date estimates of long-term survival rates than do conventional methods.

Methods The 1973–98 database of the Surveillance, Epidemiology, and End Results (SEER) programme of the US National Cancer Institute was analysed by period analysis.

Findings Estimates of 5-year, 10-year, 15-year, and 20-year relative survival rates for all types of cancer were 63%, 57%, 53%, and 51%, respectively, by period analysis. These estimates were 1%, 7%, 11%, and 11% higher, respectively, than corresponding estimates by cohort-based survival analysis. By period analysis, 20-year relative survival rates were close to 90% for thyroid and testis cancer, exceeded 80% for melanomas and prostate cancer, were about 80% for endometrial cancer, and almost 70% for bladder cancer and Hodgkin's disease. A 20-year relative survival rate of 65% was estimated for breast cancer, of 60% for cervical cancer, and of about 50% for colorectal, ovarian, and renal cancer.

Interpretation Timely detection of improvements in long-term survival rates might help to prevent clinicians and their patients from undue discouragement or depression by outdated and often overly pessimistic survival expectations. It also adds to the value of cancer surveillance as a basis for appropriate public-health decisions.

Lancet 2002; **360:** 1131–35

	Relative survival rate, % (SE)			
	5 years	10 years	15 years	20 years
Cancer site				
Oral cavity and pharynx	56·7 (1·3)	44·2 (1·4)	37·5 (1·6)	33·0 (1·8)
Oesophagus	14·2 (1·4)	7·9 (1·3)	7·7 (1·6)	5·4 (2·0)
Stomach	23·8 (1·3)	19·4 (1·4)	19·0 (1·7)	14·9 (1·9)
Colon	61·7 (0·8)	55·4 (1·0)	53·9 (1·2)	52·3 (1·6)
Rectum	62·6 (1·2)	55·2 (1·4)	51·8 (1·8)	49·2 (2·3)
Liver and intrahepatic bile duct	7·5 (1·1)	5·8 (1·2)	6·3 (1·5)	7·6 (2·0)
Pancreas	4·0 (0·5)	3·0 (0·5)	2·7 (0·6)	2·7 (0·8)
Larynx	68·8 (2·1)	56·7 (2·5)	45·8 (2·8)	37·8 (3·1)
Lung and bronchus	15·0 (0·4)	10·6 (0·4)	8·1 (0·4)	6·5 (0·4)
Melanomas	89·0 (0·8)	86·7 (1·1)	83·5 (1·5)	82·8 (1·9)
Breast	86·4 (0·4)	78·3 (0·6)	71·3 (0·7)	65·0 (1·0)
Cervix uteri	70·5 (1·6)	64·1 (1·8)	62·8 (2·1)	60·0 (2·4)
Corpus uteri and uterus, NOS	84·3 (1·0)	83·2 (1·3)	80·8 (1·7)	79·2 (2·0)
Ovary	55·0 (1·3)	49·3 (1·6)	49·9 (1·9)	49·6 (2·4)
Prostate	98·8 (0·4)	95·2 (0·9)	87·1 (1·7)	81·1 (3·0)
Testis	94·7 (1·1)	94·0 (1·3)	91·1 (1·8)	88·2 (2·3)
Urinary bladder	82·1 (1·0)	76·2 (1·4)	70·3 (1·9)	67·9 (2·4)
Kidney and renal pelvis	61·8 (1·3)	54·4 (1·6)	49·8 (2·0)	47·3 (2·6)
Brain and other nervous system	32·0 (1·4)	29·2 (1·5)	27·6 (1·6)	26·1 (1·9)
Thyroid	96·0 (0·8)	95·8 (1·2)	94·0 (1·6)	95·4 (2·1)
Hodgkin's disease	85·1 (1·7)	79·8 (2·0)	73·8 (2·4)	67·1 (2·8)
Non-Hodgkin lymphomas	57·8 (1·0)	46·3 (1·2)	38·3 (1·4)	34·3 (1·7)
Multiple myeloma	29·5 (1·6)	12·7 (1·5)	7·0 (1·3)	4·8 (1·5)
Leukaemias	42·5 (1·2)	32·4 (1·3)	29·7 (1·5)	26·2 (1·7)

Rates derived from SEER 1973–98 database (both sexes, all ethnic groups).[12]
NOS=not otherwise specified.

Table 4: **Most recent period estimates of relative survival rates, by cancer site**

Prognostic factors and treatment of pediatric acute lymphoblastic leukemia.

Lee JW[1], Cho B[1].

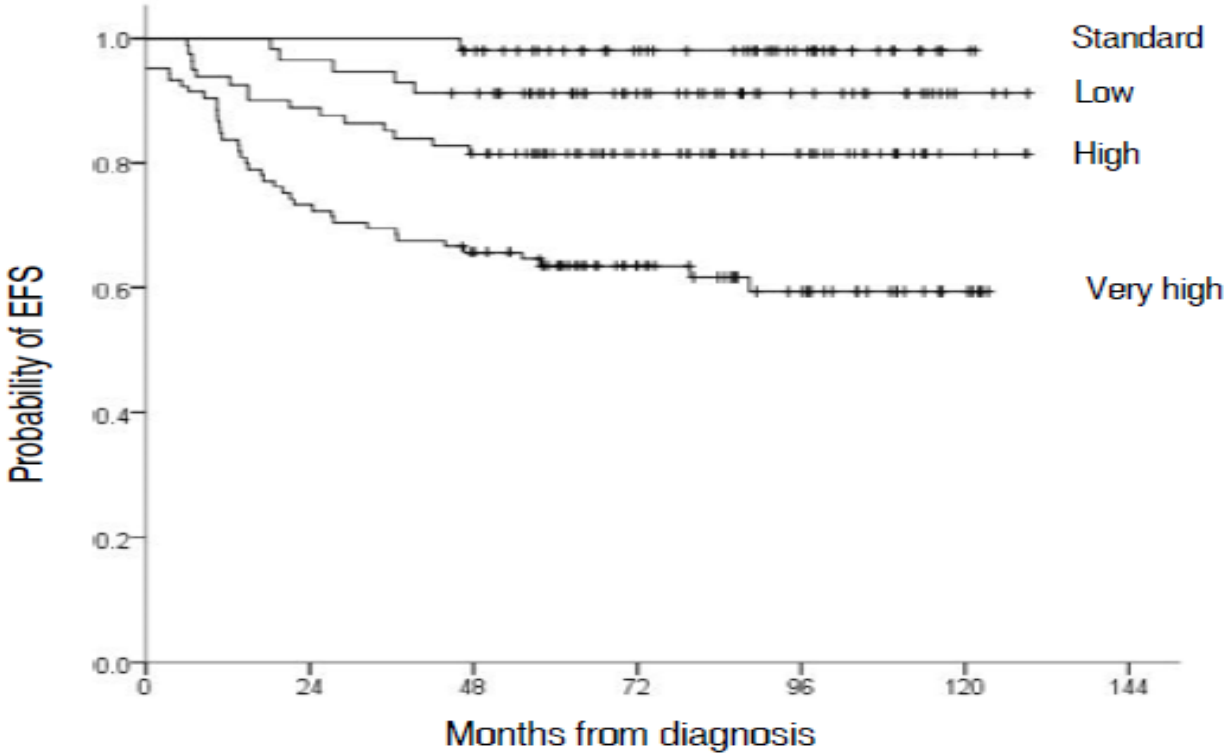


Fig. 1. The 10-year event-free survival (EFS) according to overall risk group for patients treated at our institution: low risk 91.2%±3.7%, standard risk 98.1%±1.9%, high risk 81.5%±4.3%, very high risk 59.4%±5.3%.

 https://doi.org/10.3345/kjp.2017.60.5.129

- Kore[illegible]

Final results of a single institution experience with a pediatric-based regimen, the augmented Berlin-Frankfurt-Münster, in adolescents and young adults with acute lymphoblastic leukemia, and comparison to the hyper-CVAD regimen.

Rytting ME[1,2], Jabbour EJ[2], Jorgensen JL[3]

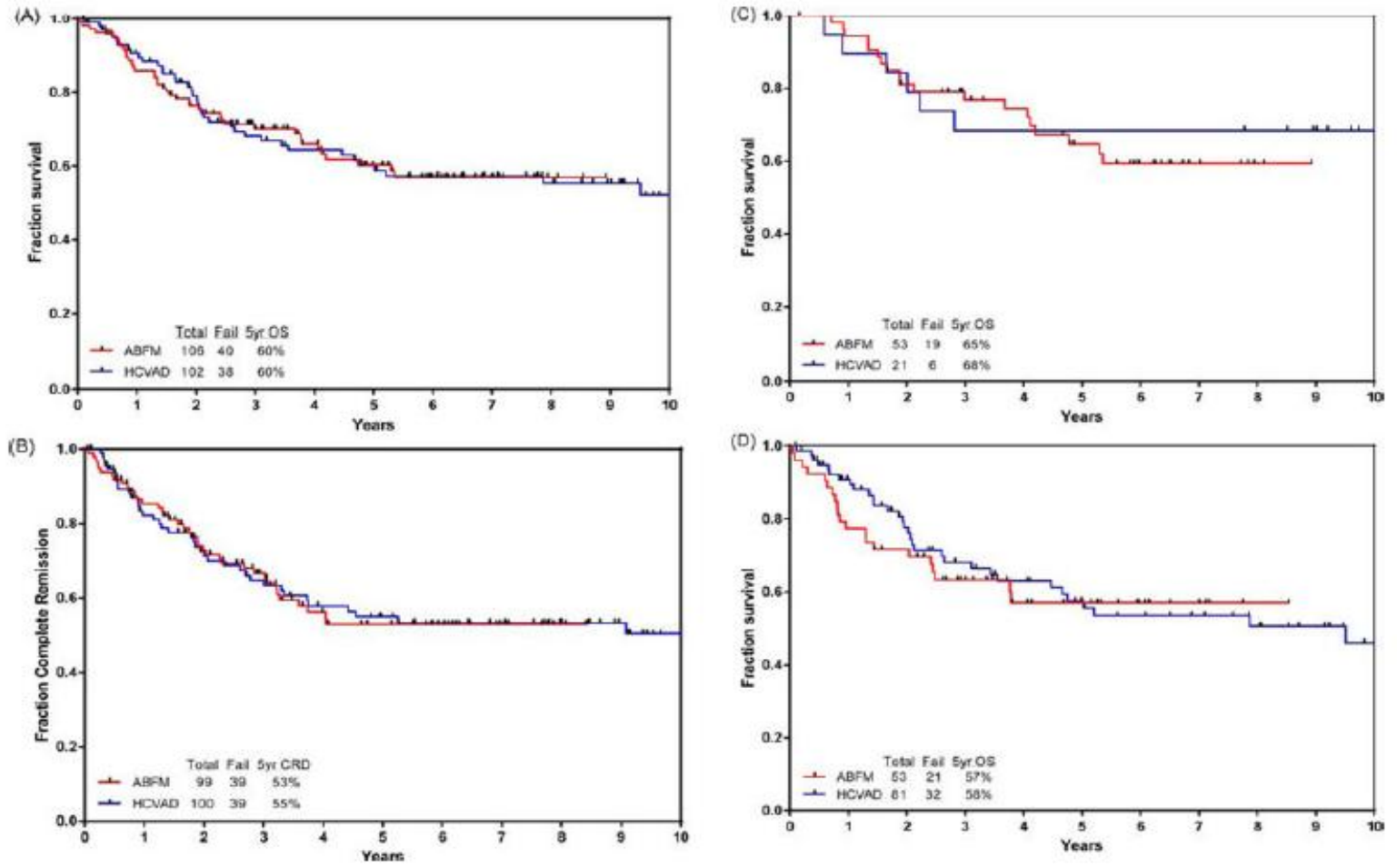


Figure 1.
Survival (A) and complete remission duration (B) with ABFM and hyper-CVAD. Survival with the two regimens among patients ≤21 years (C), and those ≥21 years (D).

Am J Hematol. 2016 Aug;91(8):819-23. doi: 10.1002/ajh.24419. Epub 2016 Jun 30.

Long-term survival and late events after allogeneic stem cell transplantation from HLA-matched siblings for acute myeloid leukemia with myeloablative compared to reduced-intensity conditioning: a report on behalf of the acute leukemia working party of European group for blood and marrow transplantation

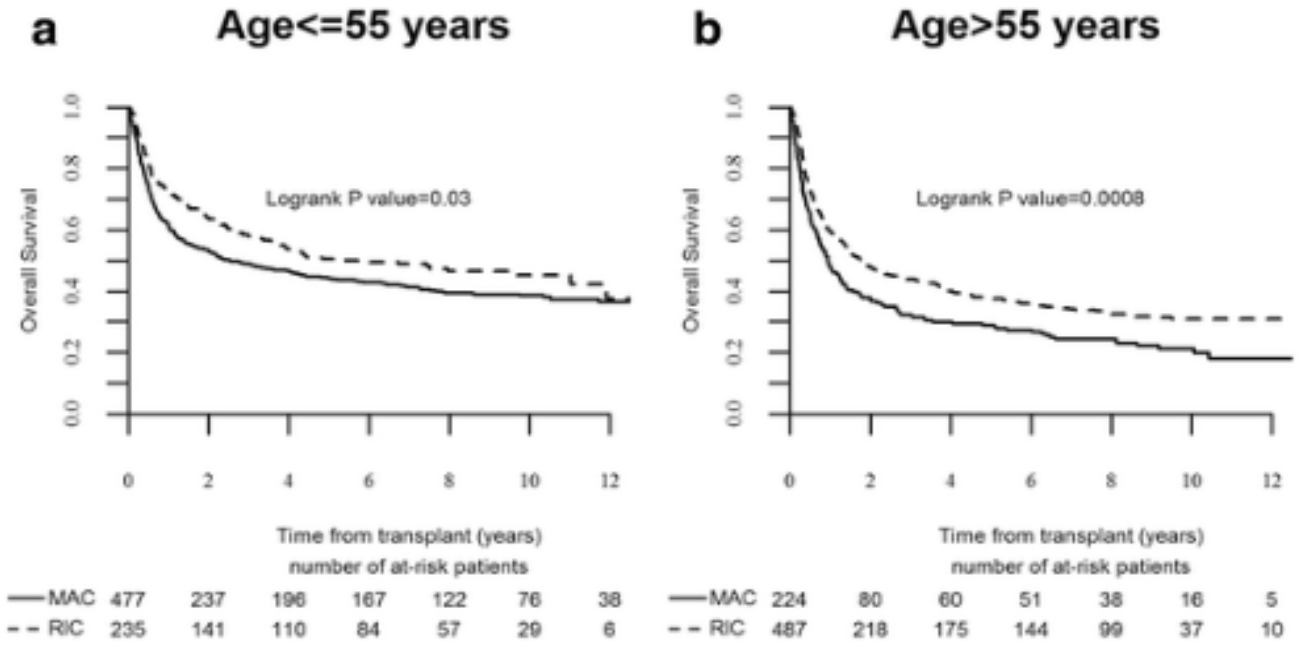


Fig. 1
Overall survival after allogeneic stem cell transplantation in patients age 50–55 years (a) or >55 years (b)

Shimoni et al. Journal of Hematology & Oncology (2016) 9:118

Superior efficacy of rituximab-based chemoimmunotherapy as an initial therapy in newly diagnosed patients with B cell indolent lymphomas: long-term results from a single center in China.

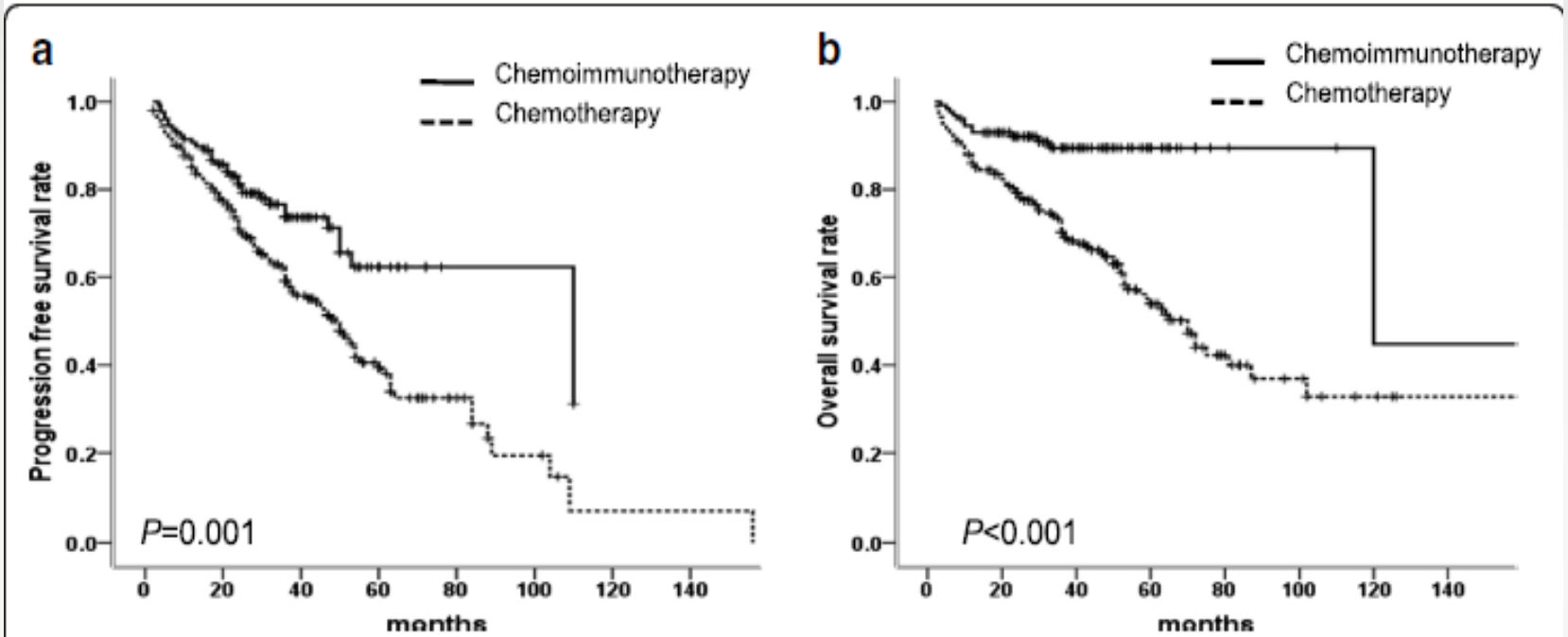


Fig. 1 The comparison of outcomes between R-based chemoimmunotherapy and chemotherapy groups in 334 B-iNHLs patients. **a** Patients with R-based chemoimmunotherapy had superior PFS than patients with chemotherapy (110 *vs.* 49 months, $P = 0.001$). **b** Patients with R-based chemoimmunotherapy had superior OS than patients with chemotherapy (120 *vs.* 72 months, $P < 0.001$)

- BMC Cancer. 2015 Jul 29;15:555.

Favorable outcomes in elderly patients undergoing high-dose therapy and autologous stem cell transplantation for non-Hodgkin lymphoma.

Dahi PB[1], Tamari R[2], Devlin SM[3],

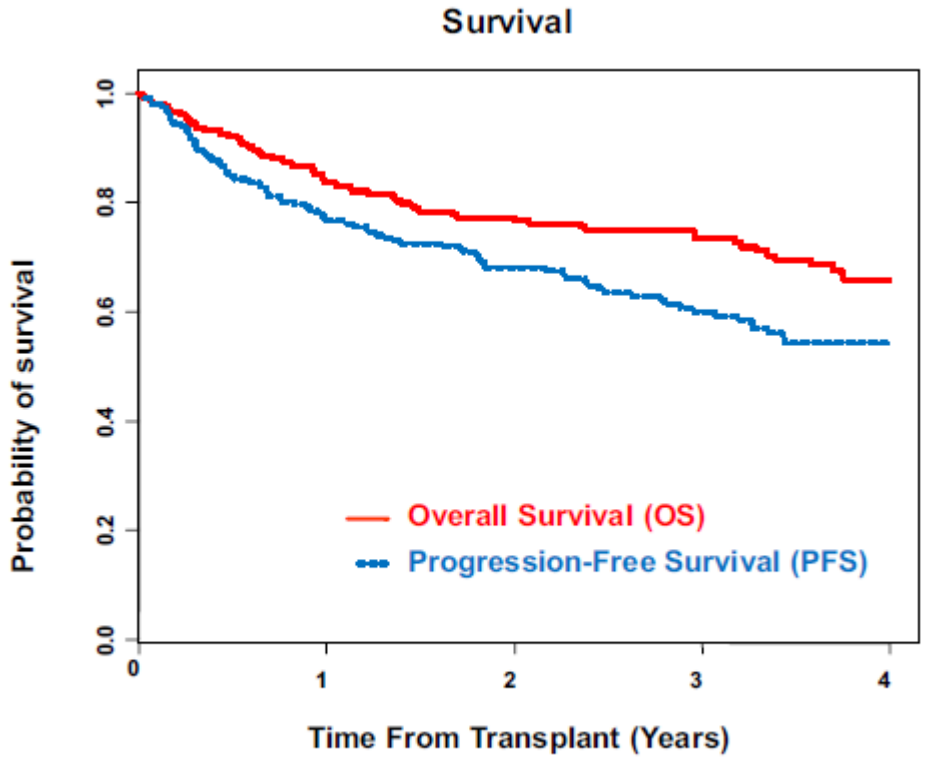


Figure 1. PFS and OS in all patients.

- Biol Blood Marr

Long-term results and competing risk analysis of the H89 trial in patients with advanced-stage Hodgkin lymphoma: a study by the Groupe d'Etude des Lymphomes de l'Adulte (GELA).

Fermé C[1], Mounier N,

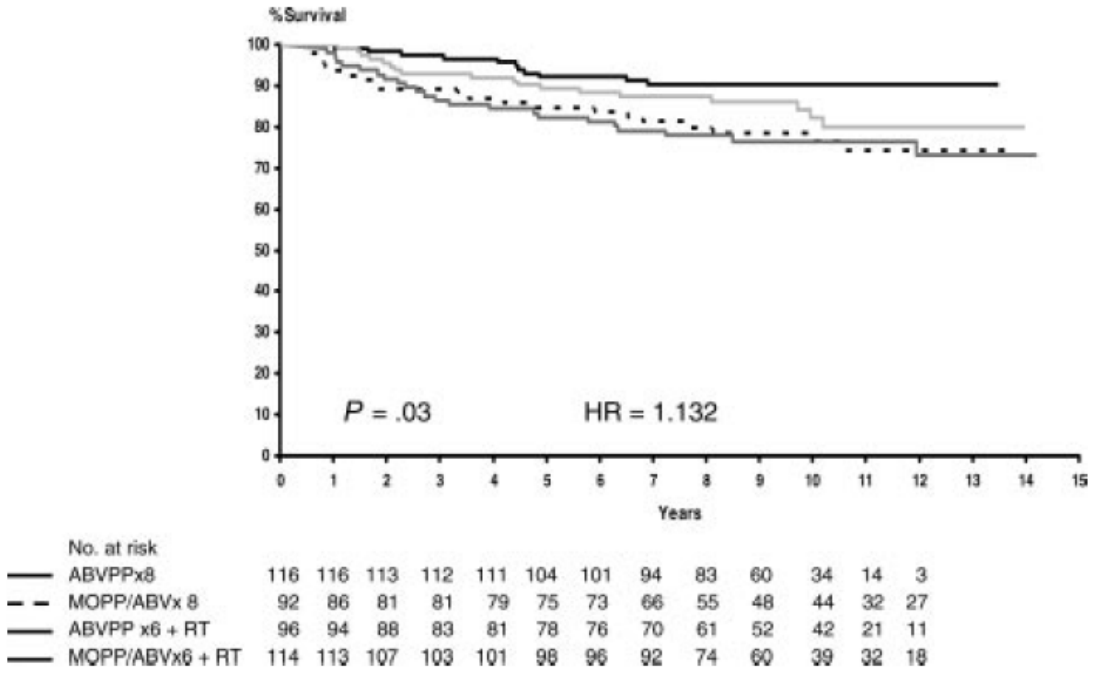


Figure 2. Estimated overall survival according to treatment arms. Broken line indicates MOPP/ABV×8 (patients at risk, n = 92; deaths, n = 21; 10-year estimate, 78%); solid black line, ABVPP×8 (patients at risk, n = 116; deaths, n = 11; 10-year estimate, 90%); light gray line, MOPP/ABV×6 with RT (patients at risk, n = 114; deaths, n = 18; 10-year estimate, 82%); and dark gray line, ABVPP×6 with RT (patients at risk, n = 96; deaths, n = 23; 10-year estimate, 77%).

Blood. 2006 Jun 15;107(12):4636-42

Sélection des patients

- **Comment identifier les patients pouvant bénéficier de la réanimation?**

- **Quels éléments doit-on prendre en compte pour admettre un patients d'onco-hémato en réanimation?**

Comment considérer la maladie sous-jacente?

La commission d'éthique de la SFH propose d'évaluer les patients selon leur situation :

.Patients dont l'objectif de prise en charge est clairement curatif : **première ligne de traitement sans évaluation de la réponse, rémission complète, excellente réponse au traitement. Ces patients doivent être admis en réanimation.**

.Patient en situation palliative ou dont l'espérance de vie est très réduite, du fait de la maladie hématologique ou des conséquences de son traitement : **Ces patients ne doivent pas être admis en réanimation et cette décision de non-admission doit être anticipée, discutée avec le patient et son entourage et notée dans le dossier médical**

.Patients de pronostic hématologique incertain : **réponse partielle, rechute avec chimiosensibilité, échec de première ligne avec des chances raisonnables de réponse à une deuxième ligne de traitement. La décision d'admission ou non en réanimation nécessite une réflexion collégiale prenant en compte en particulier l'âge, le performans status, les comorbidités, l'intensité des défaillances d'organe et le pronostic de l'hémopathie**

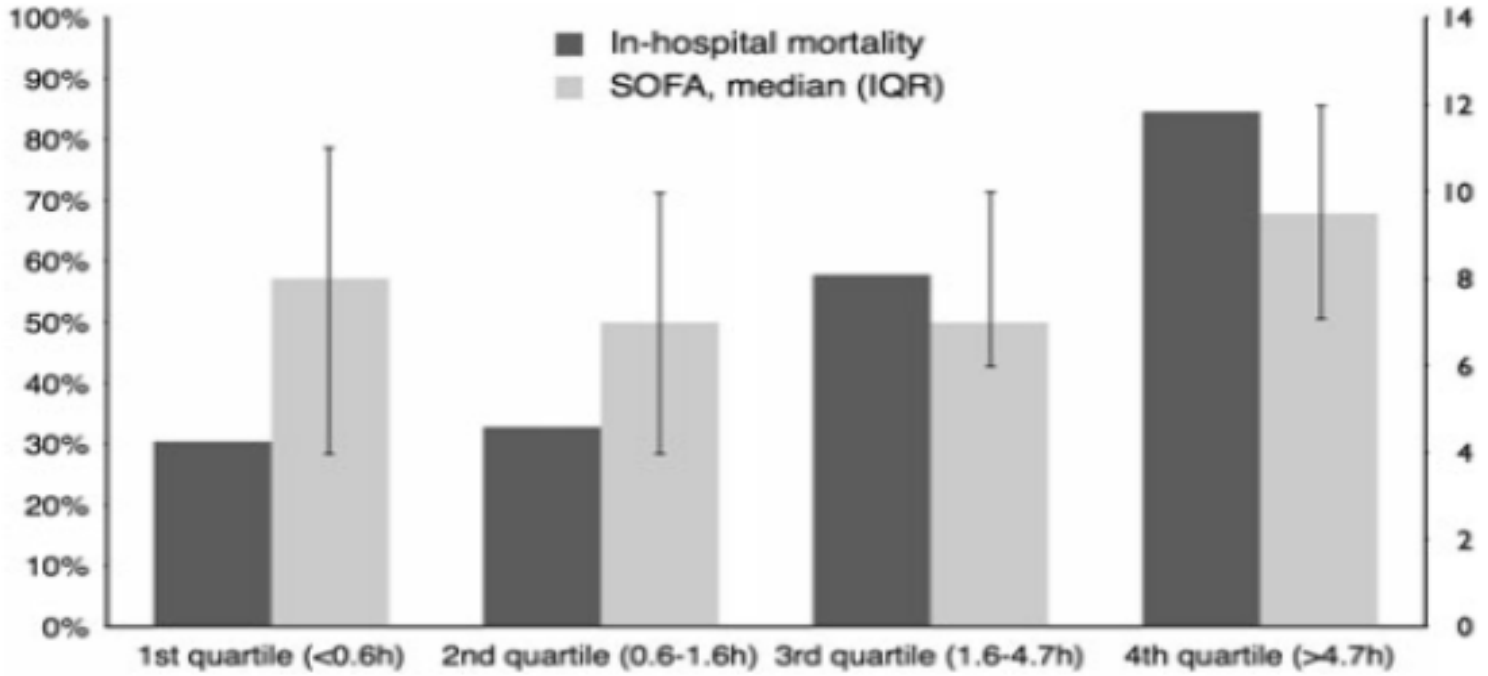
- **Admission précoce :**
  - **Pour privilégier les thérapeutiques non invasives.**
  - **Ne pas attendre la défaillance multiviscérale**

Intensive Care Med (2012) 38:1505–1513
DOI 10.1007/s00134-012-2594-0

ORIGINAL

Jae-Uk Song
Gee Young Suh
Hye Yun Park
So Yeon Lim
Seo Goo Han
Yeh Rim Kang
O Jung Kwon
Sookyoung Woo
Kyeongman Jeon

Early intervention on the outcomes in critically ill cancer patients admitted to intensive care units



VOLUME 31 · NUMBER 22 · AUGUST 1 2013

JOURNAL OF CLINICAL ONCOLOGY

ORIGINAL REPORT

Outcomes of Critically Ill Patients With Hematologic Malignancies: Prospective Multicenter Data From France and Belgium—A Groupe de Recherche Respiratoire en Réanimation Onco-Hématologique Study

Elie Azoulay, Djamel Mokart, Frédéric Pène, Jérôme Lambert, Achille Kouatchet, Julien Mayaux, François Vincent, Martine Nyunga, Fabrice Bruneel, Louise-Marie Laisne, Antoine Rabbat, Christine Lebert, Pierre Perez, Marine Chaize, Anne Renault, Anne-Pascale Meert, Dominique Benoit, Rebecca Hamidfar,

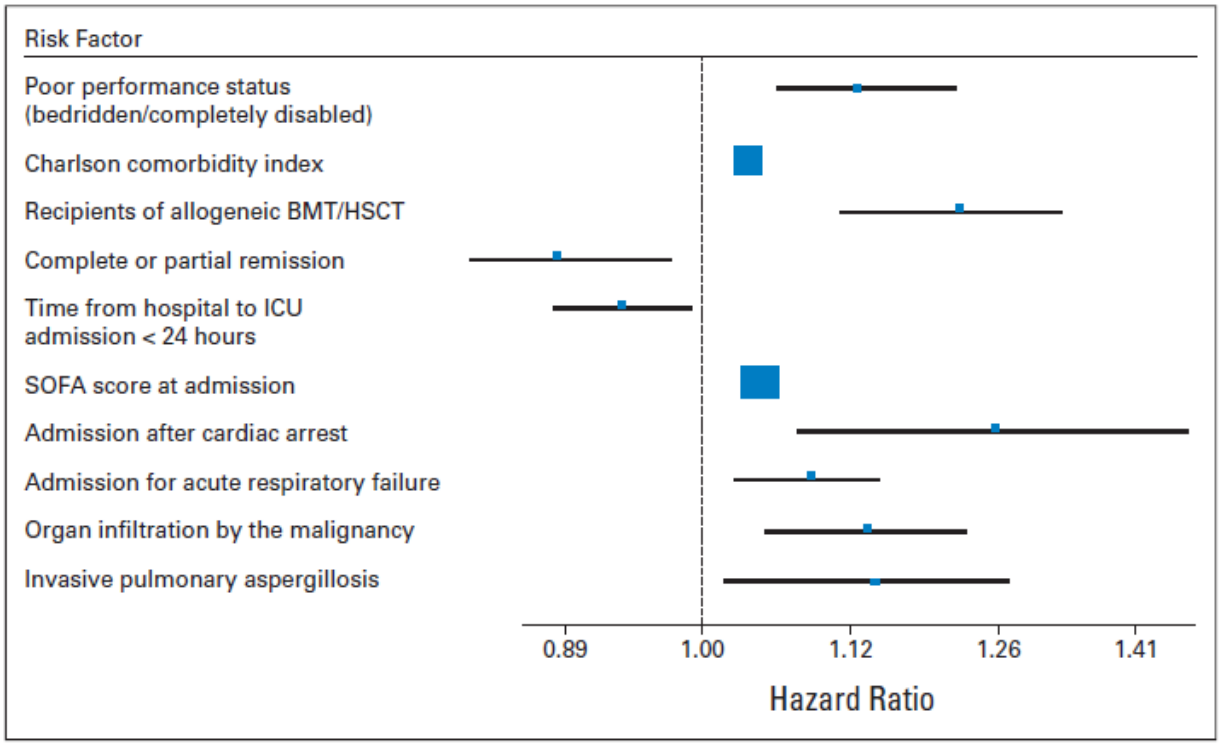


Fig 4. Multivariable analysis: effects on hospital mortality of covariates identified by multivariate logistic regression. Results are presented with and without imputation on the missing data from the Sepsis-Related Organ Failure Assessment (SOFA) score. Goodness-of-fit (Le Cessie-van Houwelingen test) is more than 0.28 for both models. BMT/HSCT, bone marrow transplantation/hematopoietic stem-cell transplantation; ICU, intensive care unit.

Leukemia & Lymphoma, August 2013; 54(8): 1724–1729

ISSN: 1042-8194 print / 1029-2403 online
DOI: 10.3109/10428194.2012.753446

informa
healthcare

ORIGINAL ARTICLE: CLINICAL

Delayed intensive care unit admission is associated with increased mortality in patients with cancer with acute respiratory failure

Djamel Mokart[1], Jérôme Lambert[2], David Schnell[3], Louis Fouché[1], Antoine Rabbat[4], Achille Kouatchet[5], Virginie Lemiale[6], François Vincent[7], Etienne Lengliné[3], Fabrice Bruneel[8], Frederic Pene[6], Sylvie Chevret[2] & Elie Azoulay[3]

Abstract

Acute respiratory failure (ARF) is the leading reason for intensive care unit (ICU) admission in patients with cancer. The aim of this study was to identify early predictors of death in patients with cancer admitted to the ICU for ARF who were not intubated at admission. We conducted analysis of a prospective randomized controlled trial including 219 patients with cancer with ARF in which day-28 mortality was a secondary endpoint. Mortality at day 28 was 31.1%. By multivariate analysis, independent predictors of day-28 mortality were: age (odds ratio [OR] 1.30/10 years, 95% confidence interval [CI] [1.01–1.68], $p = 0.04$), more than one line of chemotherapy (OR 2.14, 95% CI [1.08–4.21], $p = 0.03$), time between respiratory symptoms onset and ICU admission > 2 days (OR 2.50, 95% CI [1.25–5.02], $p = 0.01$), oxygen flow at admission (OR 1.07/L, 95% CI [1.00–1.14], $p = 0.04$) and extra-respiratory symptoms (OR 2.84, 95%CI [1.30–6.21], $p = 0.01$). After adjustment for the logistic organ dysfunction (LOD) score at admission, only time between respiratory symptoms onset and ICU admission > 2 days and LOD score were independently associated with day-28 mortality. Determinants of death include both factors non-amenable to change, and delay in ARF management. These results suggest that early intensive care management of patients with cancer with ARF may translate to better survival.

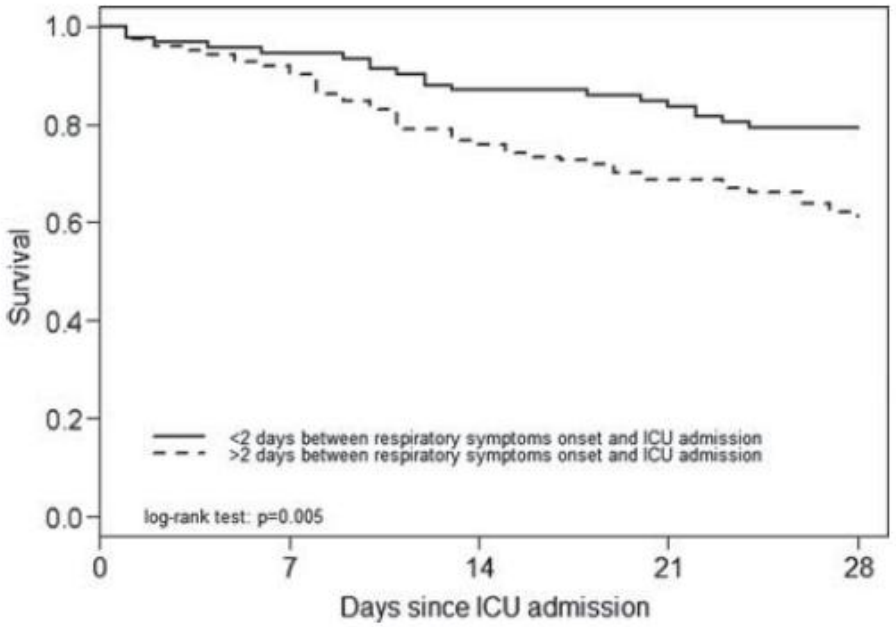


Figure 1. Survival according to time between respiratory symptoms onset and ICU admission.

Intensive Care Med (2003) 29:1688–1695
DOI 10.1007/s00134-003-1957-y

ORIGINAL

Jérôme Larché
Élie Azoulay
Fabienne Fieux

Improved survival of critically ill cancer patients with septic shock

Abstract *Objective:* To identify predictors of 30-day mortality in critically ill cancer patients with septic shock. *Design:* Retrospective study over a 6-year period. *Setting:* Twelve-bed medical intensive care unit (ICU). *Patients:* Eighty-eight patients (55 men, 33 women) aged 55 (43.5–63) years admitted to the ICU for septic shock. *Interventions:* None. *Measurements and main results:* Eighty (90.9%) patients had hematological malignancies and eight (9.1%) had solid tumors; 47 patients (53.4%) were neutropenic, 19 (21.6%) were hematopoietic stem cell transplantation (HSCT) recipients, and 27 (30.7%) were in remission. Microbiologically documented infections were found in 60 (68.2%) patients. The Simplified Acute Physiologic Score II (SAPS II) and Logistic Organ Dysfunction (LOD) scores at ICU admission were 66 (47–89) and 7 (5–10), respectively, and the LOD score on day 3 was 8 (4–10). Sixty-eight (78.1%) patients received invasive mechanical ventilation (MV), 12 (13.6%) noninvasive MV, 22 (25%) dialysis. Thirty-day mortality was 65.5% (57/88). By multivariable analysis, mortality was higher when time to antibiotic treatment was >2 h [odds ratio (OR), 7.05; 95% confidence interval (95% CI), 1.17–42.21] and when DLOD (day 3–day 1 LOD score/day 3 LOD score) was high (OR, 3.47; 95% CI, 1.44–8.39); mortality was lower when admission occurred between 1998 and 2000 (OR, 0.23; 95% CI, 0.05–0.98) and when initial antibiotics were adapted (OR, 0.24; 95% CI, 0.06–0.09). *Conclusions:* Earlier ICU admission and antibiotic treatment of critically ill cancer patients with septic shock is associated with higher 30-day survival. The LOD score change on day 3 as compared to admission is useful for predicting survival.

Keywords Critically ill cancer patients · Septic shock · LOD score · Mortality · Treatment delays · Antibiotics

Table 4 Multivariable analysis to identify independent risk factors of 30-day mortality. Goodness-of-fit chi-square *P* value >0.05. {*DLOD* [(LOD score on day 3–day 1)/LOD score on day 3]}

	Odds ratio	95% CI	*P* value
ICU admission between 1998 and 2000	0.231	0.054–0.988	0.04
Lymphoma	5.6	0.40–16.60	0.07
Time to antibiotic administration >2 h	7.05	1.17–42.21	0.03
DLOD ratio	3.47	1.44–8.39	0.005
Colloid on day 1	3.43	0.63–18–69	0.15
Antibiotic adaptation	0.245	0.06–0.95	0.04

Admission précoce:

- **Pour privilégier les thérapeutiques non invasives.**
- **Et avant l'apparition de défaillance multiviscérale**

Short- and long-term outcomes in onco-hematological patients admitted to the intensive care unit with classic factors of poor prognosis

Etienne Faucher[1,2], Martin Cour[1,2], Vincent Jahandiez[1,2], Adeline Grateau[1],

Received: October 29, 2015 *Accepted:* February 23, 2016 *Published:* March 8, 2016

ABSTRACT

Although the overall mortality of patients admitted to intensive care units (ICU) with hematological malignancy has decreased over the years, some groups of patients still have low survival rates. We performed a monocentric retrospective study including all patients with hematological malignancy in a ten-year period, to identify factors related to the outcome for the whole cohort and for patients with allogeneic hematopoietic stem cell transplantation (HSCT), neutropenia, or those requiring invasive mechanical ventilation (IMV). A total of 418 patients with acute leukemia (n=239; 57%), myeloma (n=69; 17%), and lymphoma (n=53; 13%) were studied. Day-28 and 1-year mortality were 49% and 72%, respectively. The type of disease was not associated with outcome. The disease status was independentlty associated with 1-year mortality only. Independent predictors of day-28 mortality were IMV, renal replacement therapy (RRT), and performance status. For allogeneic HSCT recipients (n=116), neutropenic patients (n=124) and patients requiring IMV (n=196), day-28 and 1-year mortality were 52%, 54%, 74% and 81%, 78%, 87%, respectively. Multivariate analysis showed that IMV and RRT for allogeneic HSCT recipients, performance status and IMV for neutropenic patients, and RRT for patients requiring IMV were independently associated with short-term mortality ($p<0.05$).

These results suggest that IMV is the strongest predictor of mortality in hematological patients admitted to ICUs, whereas allogeneic HSCT and neutropenia do not worsen their short-term outcome.

Table 6: Day-28 logistic regression analysis according to the treatment/condition

	Allogeneic HSCT (n=116)	Neutropenia (n=124)
Charlson score	NA	NA
PS (per point)	NS	1.69 [1.04-2.76][b]
Neutropenia	NA	NA
IMV[a]	4.09 [1.80-9.30][c]	9.69 [3.86-24.33][c]
RRT[a]	3.78 [1.34-10.65][b]	NS
Vasopressors[a]	NA	NS

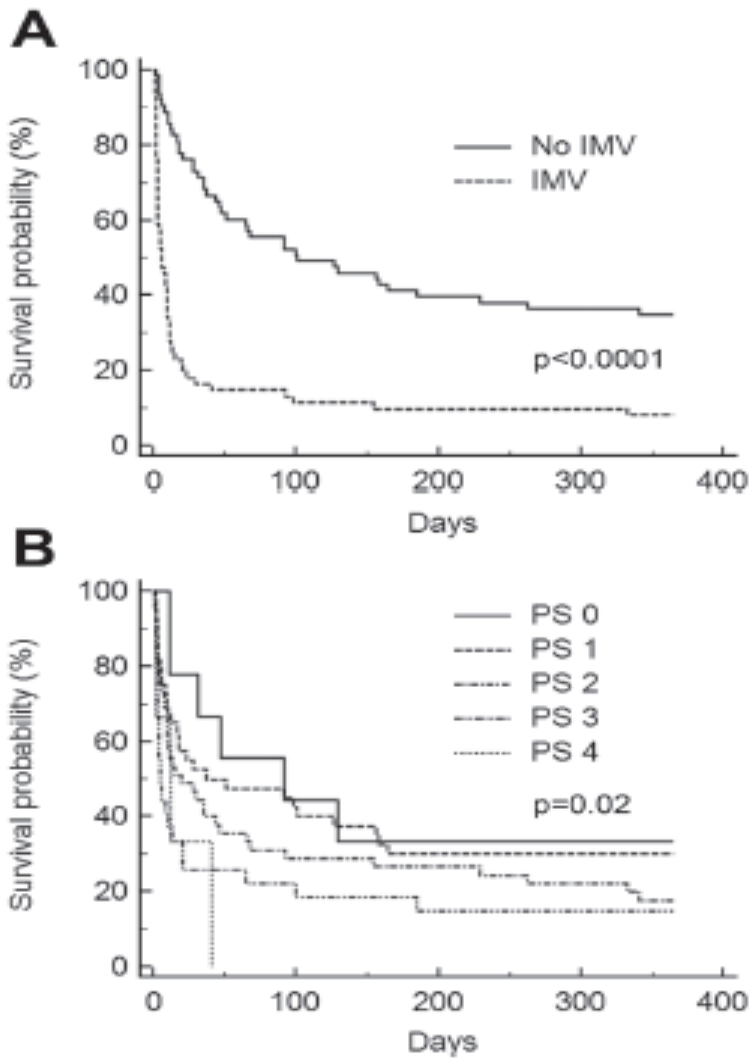


Figure 3: Kaplan-Meier survival curves for neutropenic patients. A. Invasive mechanical ventilation (IMV). **B**. Performance status (PS).

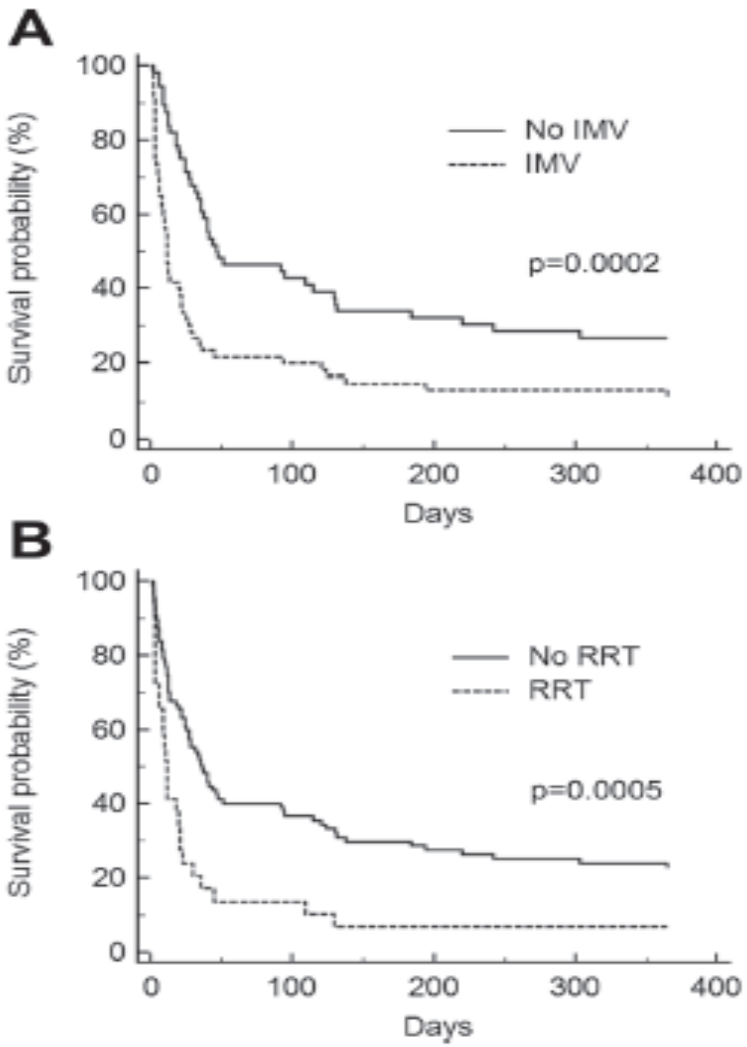


Figure 2: Kaplan-Meier survival curves for allogeneic hematopoietic stem-cell transplantation recipients. A. Invasive mechanical ventilation (IMV). **B.** Renal replacement therapy (RRT).

NONINVASIVE VENTILATION IN IMMUNOSUPPRESSED PATIENTS WITH PULMONARY INFILTRATES, FEVER, AND ACUTE RESPIRATORY FAILURE

GILLES HILBERT, M.D., DIDIER GRUSON, M.D., FRÉDERIC VARGAS, M.D., RUDDY VALENTINO, M.D., GEORGES GBIKPI-BENISSAN, M.D., MICHEL DUPON, M.D., JOSY REIFFERS, M.D., AND JEAN P. CARDINAUD, M.D.

ABSTRACT

Background Avoiding intubation is a major goal in the management of respiratory failure, particularly in immunosuppressed patients. Nevertheless, there are only limited data on the efficacy of noninvasive ventilation in these high-risk patients.

Methods We conducted a prospective, randomized trial of intermittent noninvasive ventilation, as compared with standard treatment with supplemental oxygen and no ventilatory support, in 52 immunosuppressed patients with pulmonary infiltrates, fever, and an early stage of hypoxemic acute respiratory failure. Periods of noninvasive ventilation delivered through a face mask were alternated every three hours with periods of spontaneous breathing with supplemental oxygen. The ventilation periods lasted at least 45 minutes. Decisions to intubate were made according to standard, predetermined criteria.

Results The base-line characteristics of the two groups were similar; each group of 26 patients included 15 patients with hematologic cancer and neutropenia. Fewer patients in the noninvasive-ventilation group than in the standard-treatment group required endotracheal intubation (12 vs. 20, $P=0.03$), had serious complications (13 vs. 21, $P=0.02$), died in the intensive care unit (10 vs. 18, $P=0.03$), or died in the hospital (13 vs. 21, $P=0.02$).

Conclusions In selected immunosuppressed patients with pneumonitis and acute respiratory failure, early initiation of noninvasive ventilation is associated with significant reductions in the rates of endotracheal intubation and serious complications and an improved likelihood of survival to hospital discharge.

(N Engl J Med 2001;344:481-7.)

TABLE 2. OUTCOMES OF TREATMENT.*

OUTCOME	NONINVASIVE-VENTILATION GROUP (N=26)	STANDARD-TREATMENT GROUP (N=26)	P VALUE	RELATIVE RISK (95% CI)
Intubation — no./total no. (%)	12/26 (46)	20/26 (77)	0.03	0.60 (0.38–0.96)
Immunosuppression from hematologic cancer and neutropenia	8/15 (53)	14/15 (93)	0.02	0.57 (0.35–0.93)
Drug-induced immunosuppression	3/9 (33)	5/9 (56)	0.32	0.60 (0.20–1.79)
Immunosuppression from the acquired immunodeficiency syndrome	1/2 (50)	1/2 (50)	0.83	1.00 (0.14–7.10)
Initial improvement in PaO_2:FiO_2 — no. (%)	12 (46)	4 (15)	0.02	
Sustained improvement in PaO_2:FiO_2 without intubation — no. (%)	13 (50)	5 (19)	0.02	
Death in the ICU — no./total no. (%)†	10/26 (38)	18/26 (69)	0.03	0.56 (0.32–0.96)
Immunosuppression from hematologic cancer and neutropenia	7/15 (47)	13/15 (87)	0.02	0.54 (0.30–0.96)
Drug-induced immunosuppression	3/9 (33)	4/9 (44)	0.50	0.75 (0.23–2.44)
Immunosuppression from the acquired immunodeficiency syndrome	0/2	1/2 (50)	0.50	0.50 (0.13–2.00)
Total duration of any ventilatory assistance — days				
Among all patients	6±3	6±5	0.59	
Among survivors	5±2	3±5	0.12	
Length of ICU stay — days				
Among all patients	7±3	9±4	0.11	
Among survivors	7±3	10±4	0.06	
Death in the hospital — no./total no. (%)	13/26 (50)	21/26 (81)	0.02	0.62 (0.40–0.95)
Immunosuppression from hematologic cancer and neutropenia	8/15 (53)	14/15 (93)	0.02	0.57 (0.35–0.93)
Drug-induced immunosuppression	4/9 (44)	6/9 (67)	0.32	0.67 (0.28–1.58)
Immunosuppression from the acquired immunodeficiency syndrome	1/2 (50)	1/2 (50)	0.83	1.00 (0.14–7.10)

Predictors of noninvasive ventilation failure in patients with hematologic malignancy and acute respiratory failure*

Mélanie Adda, MD; Isaline Coquet, MD; Michaël Darmon, MD; Guillaume Thiery, MD; Benoît Schlemmer, MD; Élie Azoulay, MD, PhD

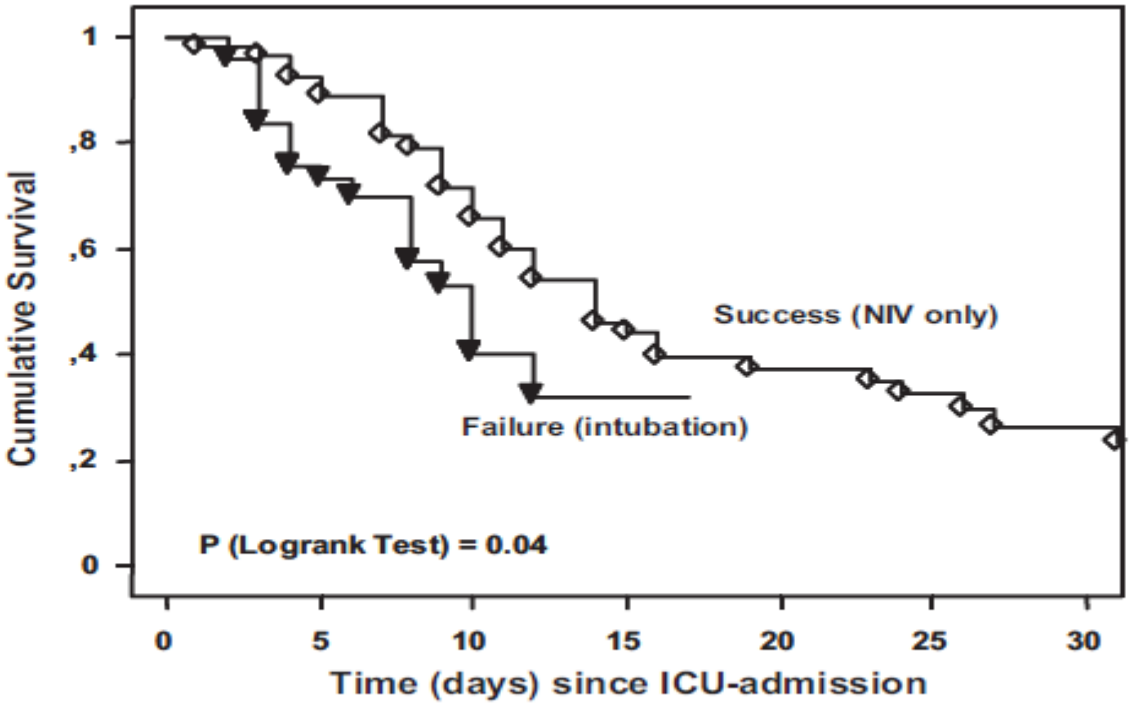


Figure 3. Survival according to failure of noninvasive ventilation (*NIV*) (i.e., need for intubation) or to success. *ICU*, intensive care unit.

Short- and long-term outcomes in onco-hematological patients admitted to the intensive care unit with classic factors of poor prognosis

Etienne Faucher[1,2], Martin Cour[1,2], Vincent Jahandiez[1,2], Adeline Grateau[1],

Received: October 29, 2015 *Accepted:* February 23, 2016 *Published:* March 8, 2016

ABSTRACT

Table 6: Day-28 logistic regression analysis according to the treatment/condition

	Allogeneic HSCT (n=116)	Neutropenia (n=124)	IMV[a] (n=196)
Charlson score	NA	NA	NS
PS (per point)	NS	1.69 [1.04-2.76][b]	NA
Neutropenia	NA	NA	NS
IMV[a]	4.09 [1.80-9.30][c]	9.69 [3.86-24.33][c]	NA
RRT[a]	3.78 [1.34-10.65][b]	NS	2.08 [1.00-4.33][b]
Vasopressors[a]	NA	NS	NA

Eur Respir J 2009; 33: 142–147
DOI: 10.1183/09031936.00167707

The role of neutropenia on outcomes of cancer patients with community-acquired pneumonia

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ABSTRACT: Although the presence of neutropenia may predispose cancer patients to develop community-acquired pneumonia, the role of neutropenia on their outcomes has not been investigated. The purpose of the present study was to compare clinical outcomes of cancer community-acquired pneumonia patients with and without neutropenia.

Patients with cancer, identified in the Community-Acquired Pneumonia Organization database, were divided into two groups according to the type of cancer and the presence of neutropenia: patients with solid cancer without neutropenia *versus* those with functional or absolute neutropenia. Among the 3,106 community-acquired pneumonia patients enrolled, 135 had cancer without neutropenia and 75 had cancer with neutropenia.

No significant difference was found between patients with and without neutropenia regarding mean time to clinical stability (5.4±2.7 *versus* 4.9±2.7 days, respectively), mean length of hospital stay (9.2±7.7 *versus* 9.9±9.6 days) and in-hospital mortality (18 *versus* 15%, respectively). Using a multiple logistic regression model, neutropenia was not associated with mortality in cancer patients when adjusting for significant covariates (odds ratio 1.30).

Lack of neutropenia, during the initial evaluation of a cancer community-acquired pneumonia patient, should not be considered an indicator of better clinical outcome.

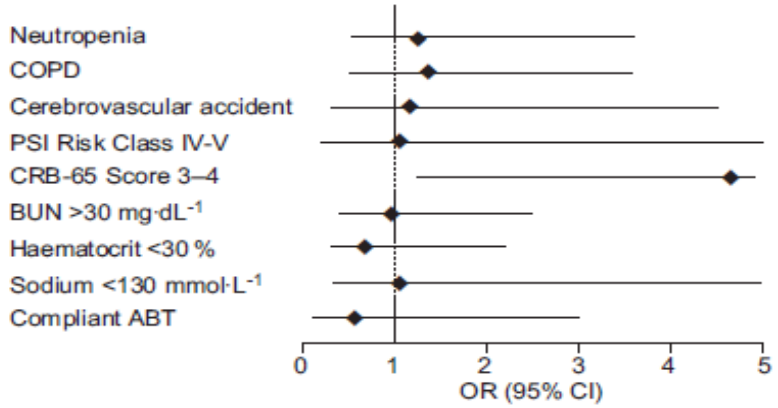


FIGURE 5. Multivariable analysis of mortality in patients with community-acquired pneumonia and cancer. All variables included in the model were dichotomised: yes *versus* no. OR: odds ratio; CI: confidence interval; COPD: chronic obstructive pulmonary disease; PSI: pneumonia severity index; CRB-65: confusion, respiratory rate ⩾30 breaths·min^{-1}, low blood pressure (systolic value <90 mmHg or diastolic value ⩽60 mmHg) and age ⩾65 yrs; BUN: blood urea nitrogen; ABT: antibiotic therapy.

- **Admission précoce:**
  - pour privilégier les thérapeutiques non invasives.
  - et avant l'apparition de défaillance multiviscérale

. **Réévaluation concertée 3-6j :**

- Préciser le nombre d'organes défaillants et redéfinir le projet thérapeutique

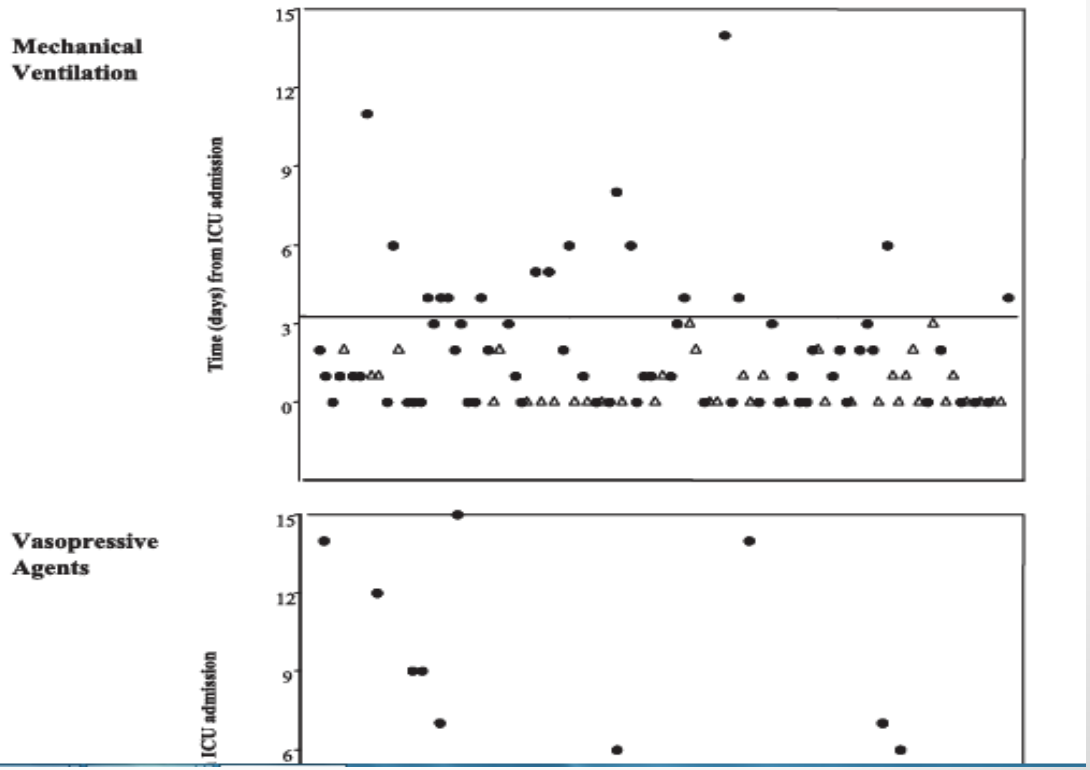
The ICU Trial: A new admission policy for cancer patients requiring mechanical ventilation*

Lucien Lecuyer, MD; Sylvie Chevret, MD, PhD; Guillaume Thiery, MD; Michael Darmon, MD; Benoît Schlemmer, MD; Élie Azoulay, MD, PhD

401 who were admitted (Fig. 2). Among 103 patients alive on day 5. Among these ures on day 6 and mortality. Mortality

Crit Care Med 2007 Vol. 35, No. 3

was 26% in patients with one organ failure on day 6, 55% in patients with two organ failures, 85% in patients with five organ failures, and 95% in patients with six organ failures. Figure 3 depicts LOD score changes during the ICU stay in patients who survived 5 days. From day 3 onward, the LOD score was significantly worse in nonsurvivors than in survivors. Time to initiation of life-sustaining treatments was also linked to mortality (Fig. 4). Among patients who survived 5 days, all patients who required initiation of endotracheal mechanical ventilation, vasopressors, or dialysis after 3 days in the ICU died. The discrimination of the LOD score for predicting hospital mortality in patients who survived 5 days was evaluated using receiver operating curves. The score on day 6 (area under the curve [AUC] 0.73 [0.69–0.80]) was more accurate than the score at admission (AUC 0.41 [0.36–0.47]) or on day 3 (AUC 0.63 [0.57–0.69], $p = .001$ between LOD6 and LOD1, and $p = .02$ between LOD6 and LOD3). Similarly, the ΔLOD score on day



Entre J1 et J5

Diminution de 2 ou plus
→ mortalité hosp : 29 %

Augmentation d'1 ou plus
→ mortalité hosp : 80 %

In time-limited trials among refractory patients, daily MODS may be a simple and objective tool for intensivists to argue for withholding, withdrawing, or challenging a new therapeutic trial.

Massion P. ***Crit Care Med 2002***

L'absence d'amélioration ou aggravation d'une défaillance multiviscérale après 3 à 5 jours de réanimation intensive

Evolution défavorable

Larché et al. Intensive Care Med 2003, 29
Lecuyer et al. Crit Care Med 2007, 35
Azoulay et al. Intensive Care Med 2006, 32
Massion et al. Crit Care Med 2002, 30
Toffart et al. Chest 2011, 139

Accumulation de facteurs de risque ↗ la mortalité

Mortalité à 60 mois ↗ :
- Age > 60 ans
- Performance Status : 3 ou 4
- Nombre de défaillance d'organe > 2
- Cancer non contrôlé

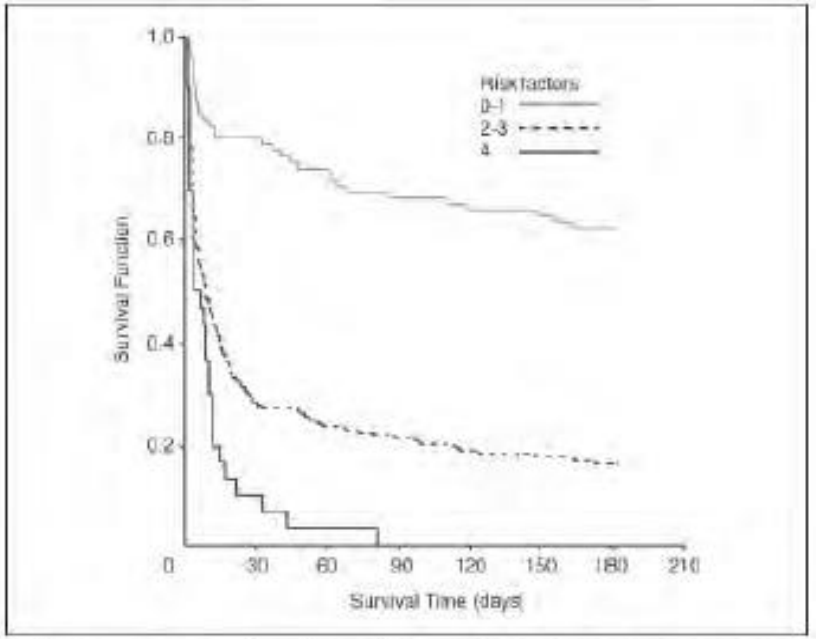


Fig 3. Survival curves for patients with renal dysfunction stratified according to the number of independent risk factors (log-rank test = 79.99; $P < .001$).

Soares et al. Journal Clin Oncology 2006, 24

VOLUME 31 · NUMBER 22 · AUGUST 1 2013

JOURNAL OF CLINICAL ONCOLOGY

ORIGINAL REPORT

Outcomes of Critically Ill Patients With Hematologic Malignancies: Prospective Multicenter Data From France and Belgium—A Groupe de Recherche Respiratoire en Réanimation Onco-Hématologique Study

Elie Azoulay, Djamel Mokart, Frédéric Pène, Jérôme Lambert, Achille Kouatchet, Julien Mayaux, François Vincent, Martine Nyunga, Fabrice Bruneel, Louise-Marie Laisne, Antoine Rabbat, Christine Lebert, Pierre Perez, Marine Chaize, Anne Renault, Anne-Pascale Meert, Dominique Benoit, Rebecca Hamidfar, Mercé Jourdain, Michael Darmon, Benoit Schlemmer, Sylvie Chevret, and Virginie Lemiale

Author affiliations appear at the end of this article.

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0732-183X/13/3122w-2810w/$20.00

DOI: 10.1200/JCO.2012.47.2365

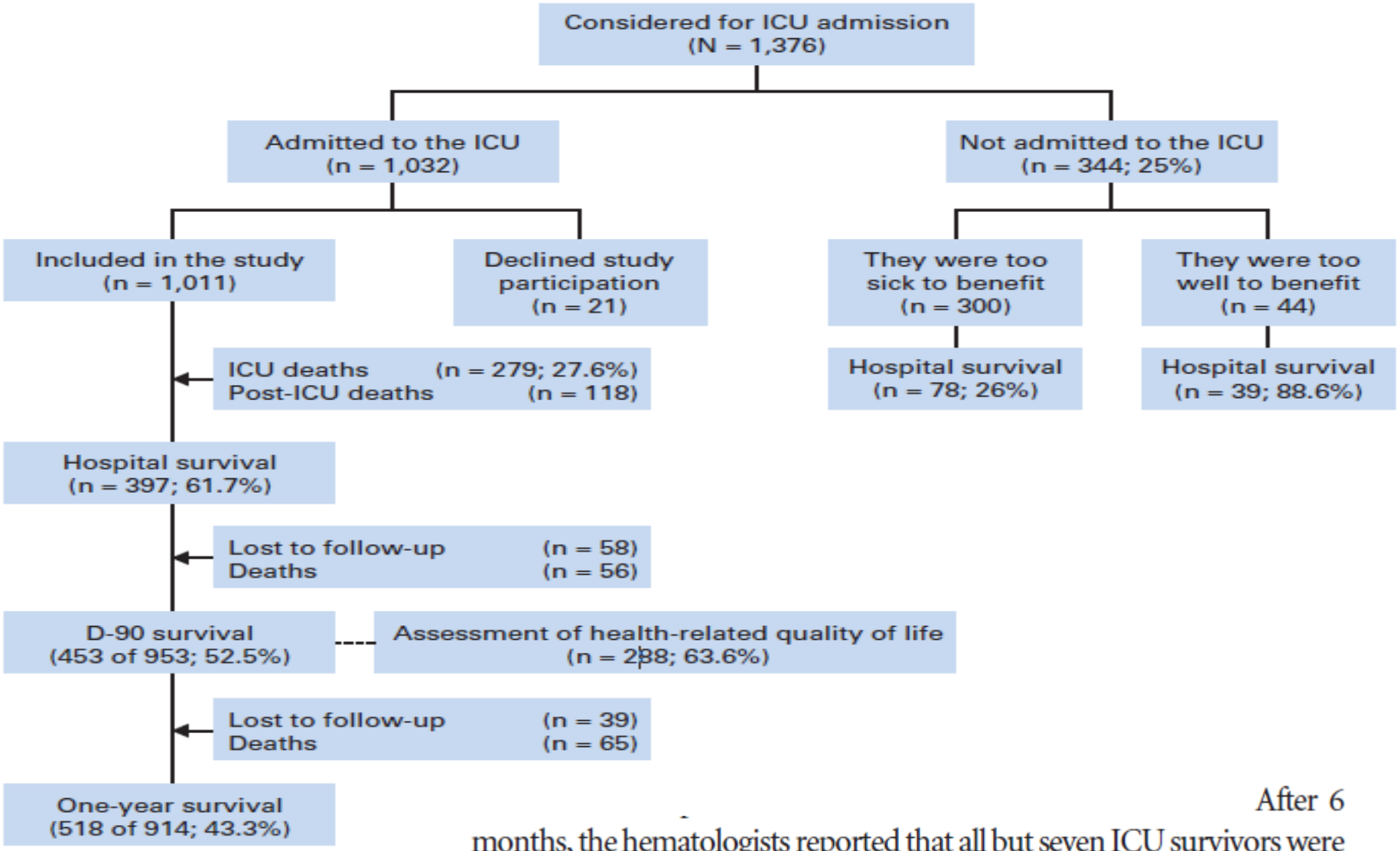
ABSTRACT

Purpose
Patients with hematologic malignancies are increasingly admitted to the intensive care unit (ICU) when life-threatening events occur. We sought to report outcomes and prognostic factors in these patients.

Patients and Methods
Ours was a prospective, multicenter cohort study of critically ill patients with hematologic malignancies. Health-related quality of life (HRQOL) and disease status were collected after 3 to 6 months.

Results
Of the 1,011 patients, 38.2% had newly diagnosed malignancies, 23.1% were in remission, and 24.9% had received hematopoietic stem-cell transplantations (HSCT, including 145 allogeneic). ICU admission was mostly required for acute respiratory failure (62.5%) and/or shock (42.3%). On day1, 733 patients (72.5%) received life-supporting interventions. Hospital, day-90, and 1-year survival rates were 60.7%, 52.5%, and 43.3%, respectively. By multivariate analysis, cancer remission and time to ICU admission less than 24 hours were associated with better hospital survival. Poor performance status, Charlson comorbidity index, allogeneic HSCT, organ dysfunction score, cardiac arrest, acute respiratory failure, malignant organ infiltration, and invasive aspergillosis were associated with higher hospital mortality. Mechanical ventilation (47.9% of patients), vasoactive drugs (51.2%), and dialysis (25.9%) were associated with mortality rates of 60.5%, 57.5%, and 59.2%, respectively. On day 90, 80% of survivors had no HRQOL alterations (physical and mental health similar to that of the overall cancer population). After 6 months, 80% of survivors had no change in treatment intensity compared with similar patients not admitted to the ICU, and 80% were in remission.

Conclusion
Critically ill patients with hematologic malignancies have good survival, disease control, and post-ICU HRQOL. Earlier ICU admission is associated with better survival.



After 6 months, the hematologists reported that all but seven ICU survivors were continuing their cancer treatment, that ICU admission did not influence therapeutic intensity in 80% of ICU survivors, and that 80% of ICU survivors were in complete or partial remission.

CONCLUSION

- **Amélioration du pronostic des POH**
  → **La réanimation doit suivre**

- **Collaboration réanimateur / onco-hématologue**
  → **Réflexion d'amont primordiale**

- Début de traitement
- Induction de chimiothérapie
- Patient en rémission, complication en cures de consolidation
- Admission « préventive »

↓

Traitement maximalise

- Patients en échappement ou en soins palliatifs
- Mauvais état général

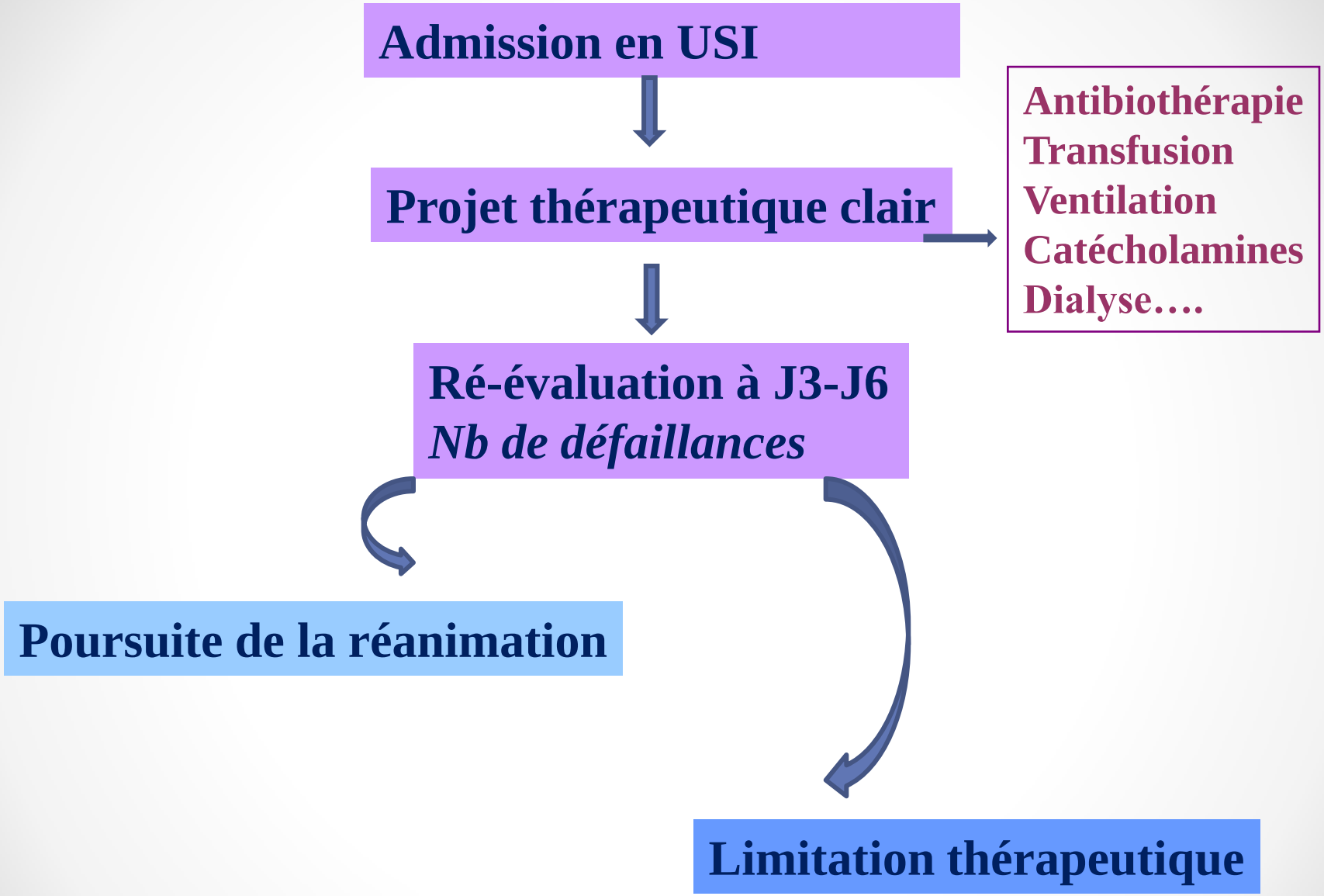
↓

Pas de transfert en réa

CONCLUSION

- **La neutropénie ne constitue pas un facteur pronostic.**

- **Admission précoce +++**
- **VNI**
- **Ne pas attendre la défaillance multiviscérale**


Admission en USI
Projet thérapeutique clair
Antibiothérapie
Transfusion
Ventilation
Catécholamines
Dialyse….
Ré-évaluation à J3-J6
Nb de défaillances
Poursuite de la réanimation
Limitation thérapeutique

MERCI