Réanimation "Standard" du patient d'Hématologie

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Le patient d'hématologie est un patient particulier !

comorbidités

Immunodéprimé: IS, lignes de chimiothérapie, allogreffe, GVH…

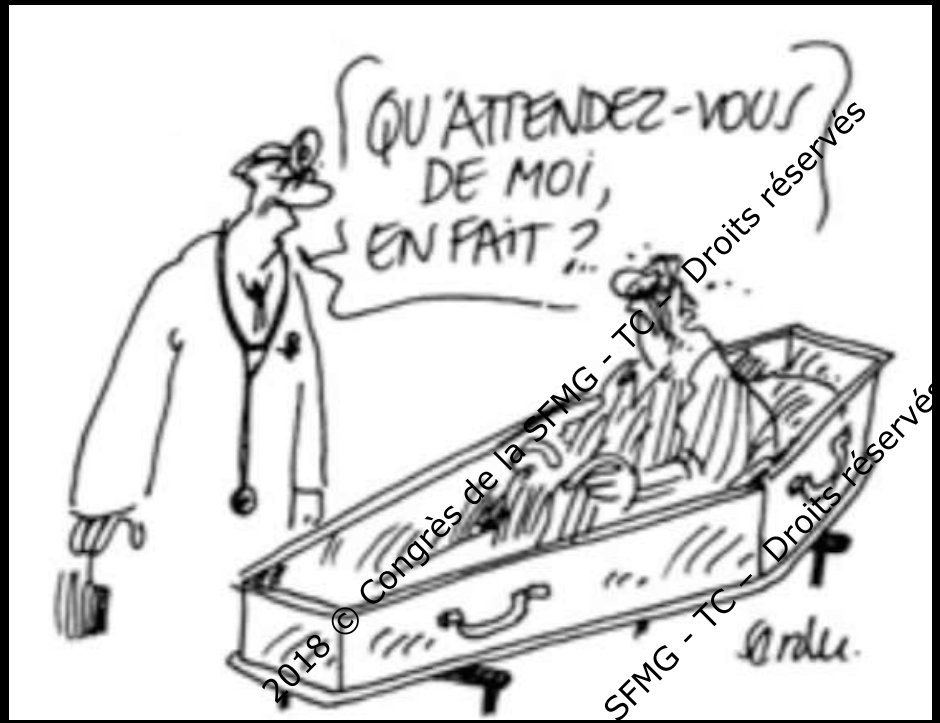
Longue histoire de la maladie: événement intercurrent

Pathologies intriquées

Fragile: manœuvres diagnostiques et thérapeutiques invasives

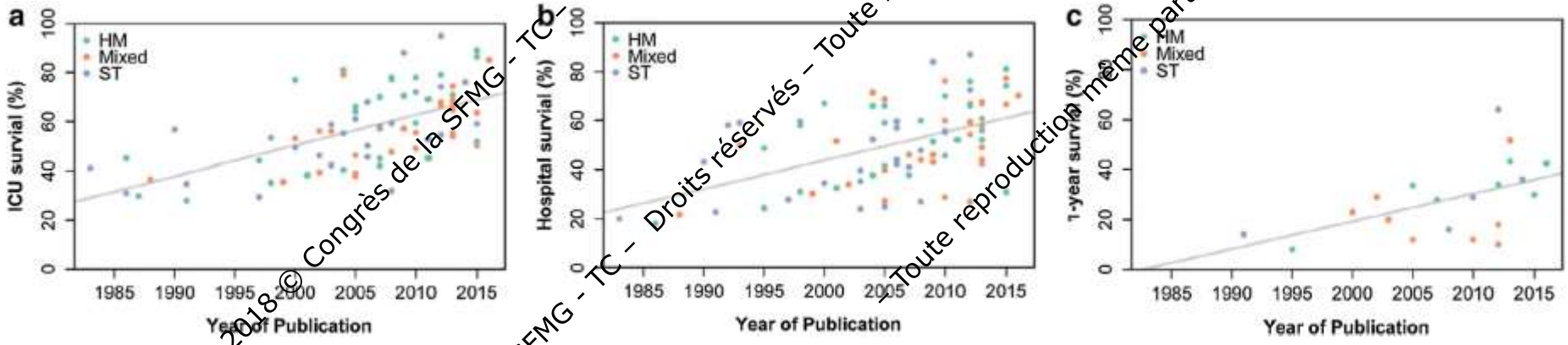
Pronostic hématologique ?

Résultat incertain?



La mauvaise réputation!

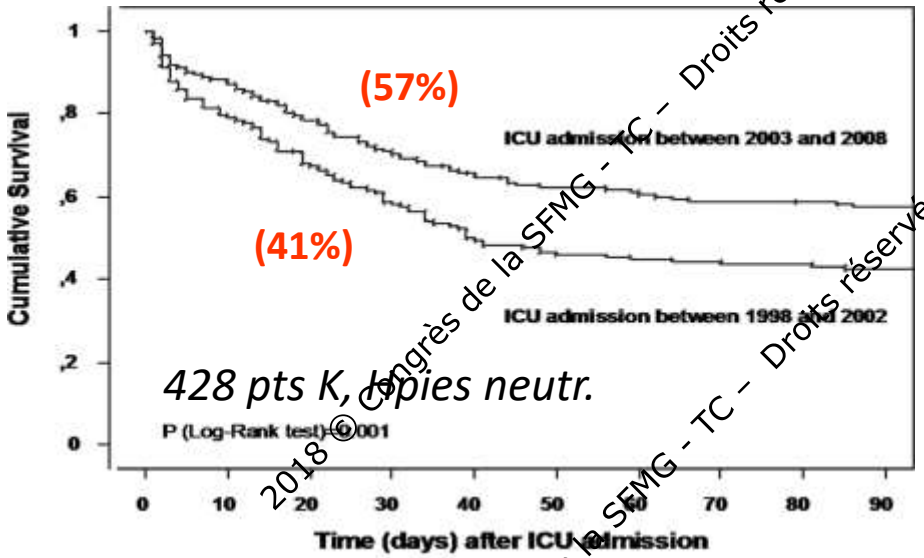
Improvement in survival of critically ill patients with cancer.

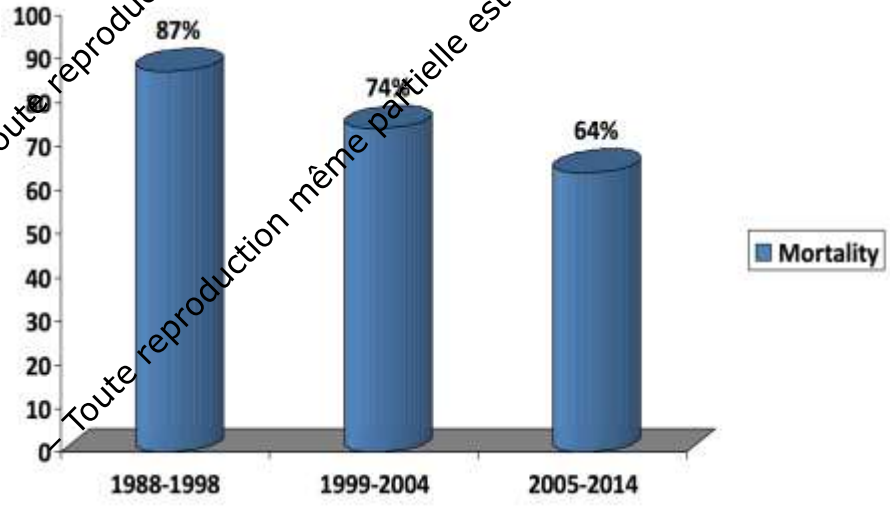


Intensive Care Med (2017) 43:1366–1382

HÉMOPATHIES MALIGNES/Greffe MO

Évolution de la mortalité en Réanimation





Greffés de MO

Crit Care Med 2012, 40: 43-49.

Greffe MO: admission en Réanimation 20%

Cohortes 90-03 et 04-11

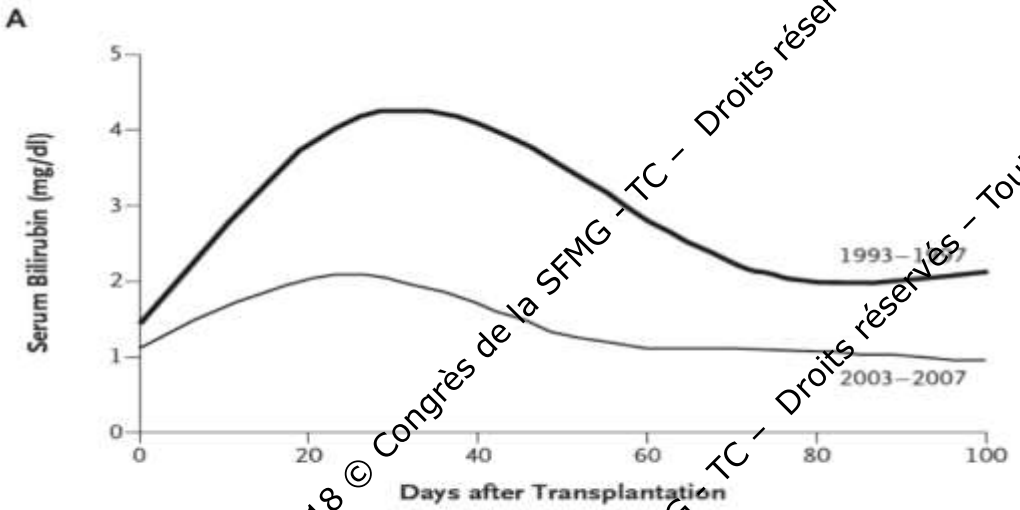
	Recent cohort 2004-2011	Historical cohort 1997-2003	p
n	288	209	
Disease status at ICU admission			<0,0001
Complete remission	183 (67)	93 (44)	
Partial remission / Progressive / chronic phase	91 (33)	117 (56)	
Time from transplant to ICU	72 [14-239]	75 [20-190]	0,68
Time from hospital admission to ICU	14 [1-26]	9,5 [0-23]	
Infection at ICU admission			
CMV reactivation	43 (15)	29 (14)	0,8
Invasive aspergillosis (probable/proven)	31 (10)	30 (14)	0,27
Invasive mycosis other than aspergillosis	10 (3,5)	30 (16)	<0,0001
Gram negative bacteriemia	52 (18)	25 (14)	0,26
HSCT toxicities at ICU admission			
Acute GVHD grade > 2	77 (27)	109 (52)	<0,0001
Steroids > 0,5 mg/kg	106 (36)	104 (50)	0,004
Veno-occlusive disease	14 (5)	12 (6)	0,69
Thrombotic microangiopathy	17 (6)	23 (11)	0,05
White blood cells < 1 G/L	176 (61)		
Creatinine (mmoL/L)	106 [71-160]	134 [92-190]	

Maladie contrôlée

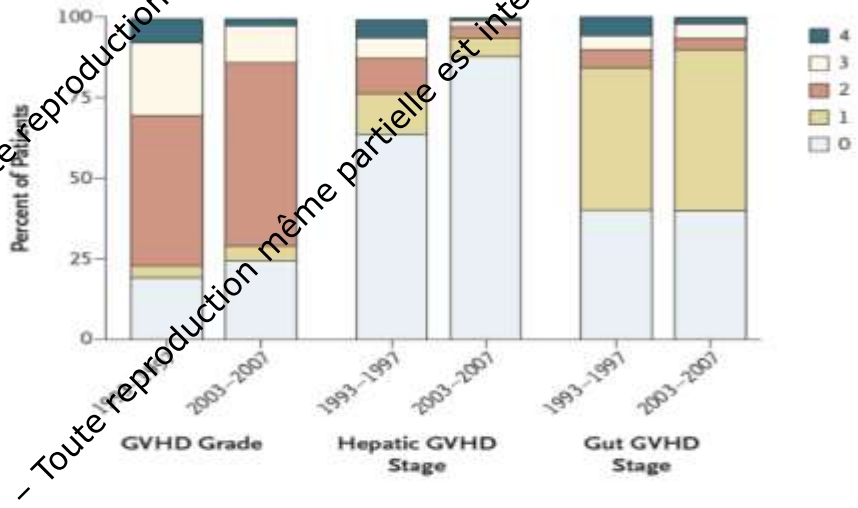
GVH contrôlée

HÉMOPATHIES MALIGNES/Greffe MO

Amélioration du pronostic 97-2007: quelques explications…



Moins de toxicité

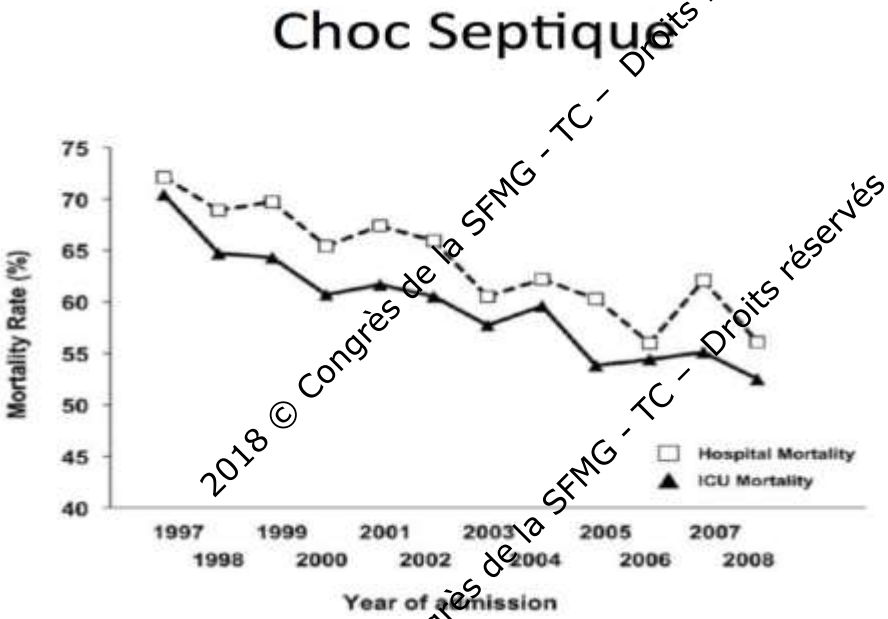


Moins de GvHD ?

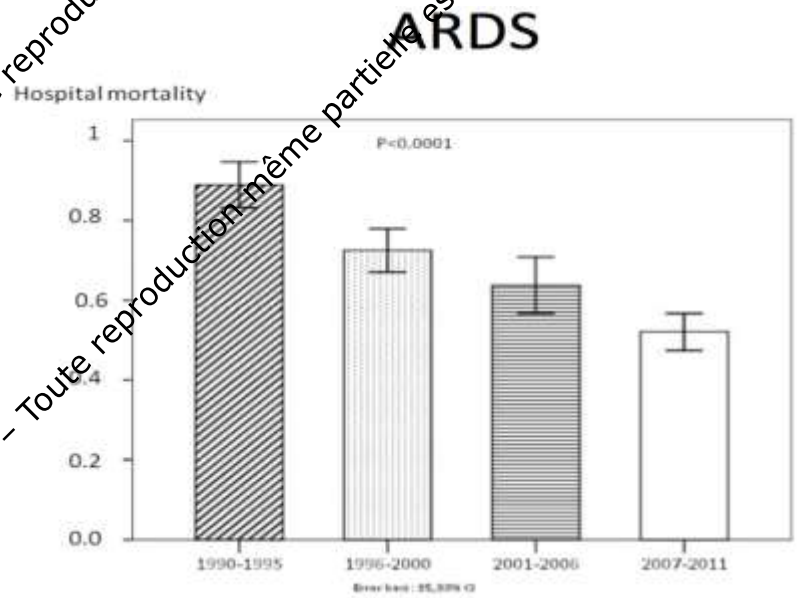
HÉMOPATHIES MALIGNES/Greffe MO

Amélioration du pronostic 97-2011: quelques explications…

Les Réanimateurs sont plus compétents!



Zuber et al, CCM 2012



E Azoulay et al, 2014

Greffe MO: admission en Réanimation 20%

Cohortes 90-03 et 04-11: Le délai d'admission en Réanimation

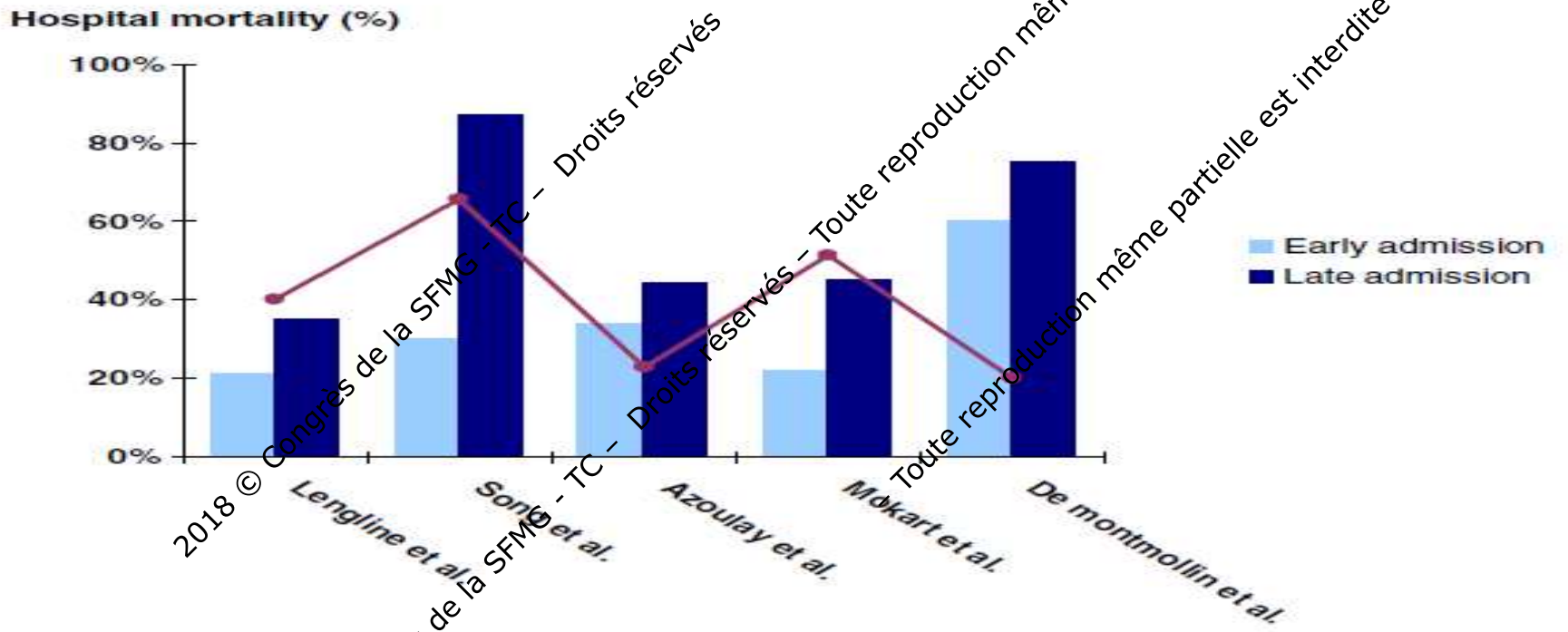
	04-11	90-03	
Organ dysfunction at ICU admission			
Acute Respiratory failure	180 (62)	134 (64)	0,78
Shock	98 (34)	46 (22)	0,004
Acute kidney injury	123 (43)	56 (27)	0,0003
Coma	58 (20)	18 (9)	0,0004
Liver dysfunction	43 (14)	8 (4)	<0,0001
Monitoring	30 (10)	4 (2)	<0,0001
ICU severity score at admission			
LOD	5 [3-8]	6 [4-9]	0,005
SAPS-II	42 [33-56]	41 [30-5[illegible]]	0,49
SOFA	7 [4,25-9]	8 [5-11]	0,012
Life sustaining therapies during ICU			
Non-invasive ventilation	82 (28)	66 (31)	0,49
Number of days with NIV	0 [0-1]	0 [0-1]	0,23
NIV not followed by MV (% of NIV)	42 (51)	22 (33)	0,029
Invasive mechanical ventilation	126 (44)	122 (58)	0,001
Number of days with MV	0 [0-6]	2 [0-6]	0,017
Catecholamines	123 (43)	99 (47)	0,31
Renal replacement therapy	57 (20)	59 (29)	0,018
ICU mortality	86 (30)	108 (52)	
Day 90 mortality	148 (51)	144 (69)	
Hospital mortality	138 (48)	141 (67)	

ICU: Intensive care unit, CMV: Cytomegalovirus, GVHD: Graft versus host disease, LOD: Logistic Organ dysfunction, SOFA: sequential organ failure assessment, SAPS: simplified acute physiology score, NIV: Non-invasive ventilation, MV: Mechanical ventilatio

Admission plus précoce

Amélioration de la survie à défaillances similaires

Hospital mortality in patients with delayed ICU admission



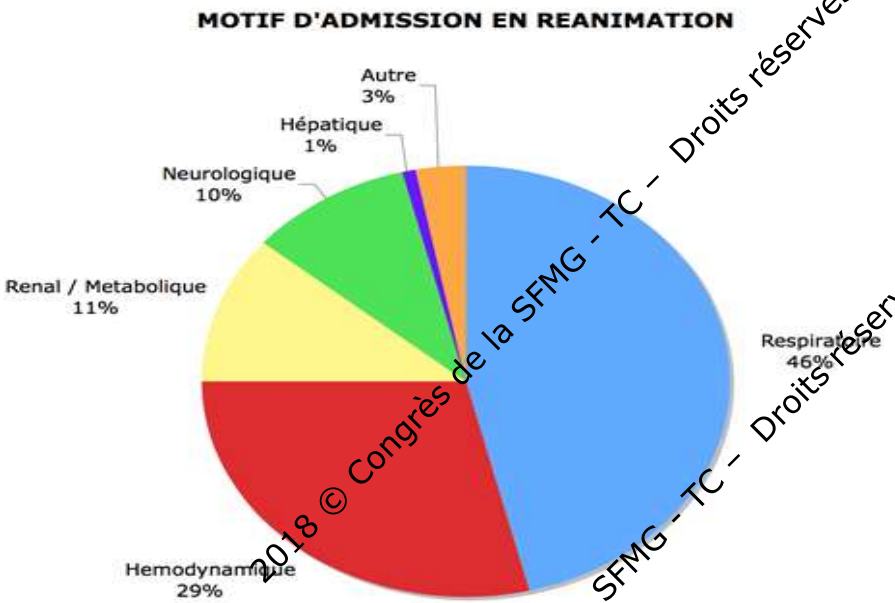
E. Azoulay et al. Blood Reviews 29 (2015) 359–367

BUTS de la REANIMATION

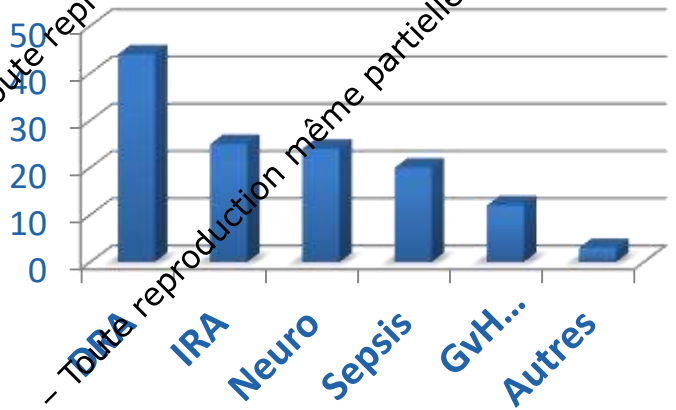
- Monitoring
- Diagnostic
- Assistance ventilatoire
- Assistance rénale
- Support hémodynamique et autres défaillances

HEMOPATHIES MALIGNES, admission en Réa 20%

Motifs d'admission



73 Allo admis en Réanimation
(CHU Lapeyronie, Montpellier)

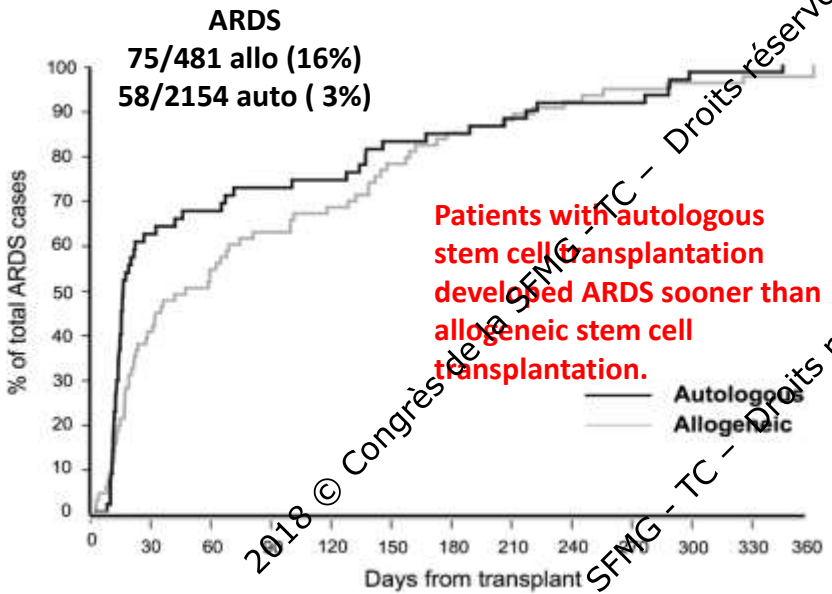


Bone Marrow Transplantation (2015), 1–6

Le problème de l'allogreffe
=> Intrications des causes!!!

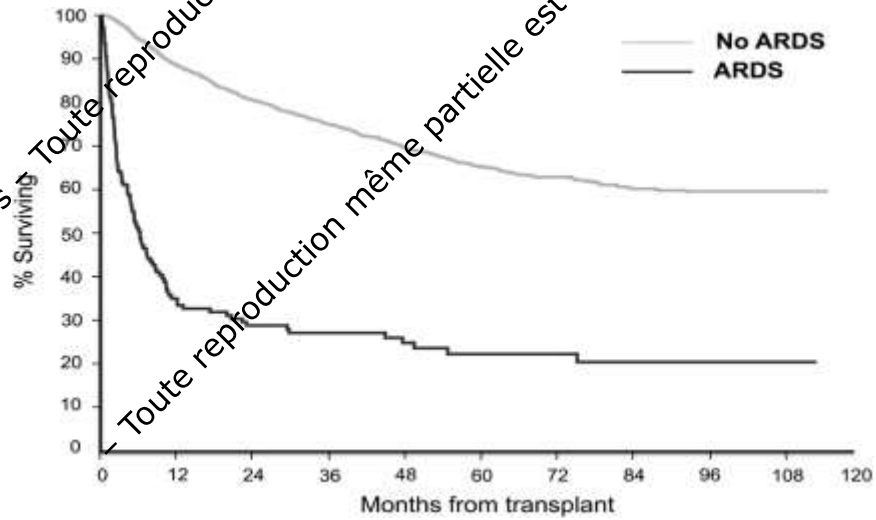
Epidemiology of Acute Respiratory Distress Syndrome Following Hematopoietic Stem Cell Transplantation

Crit Care Med 2016; 44:1082–1090



Patients with autologous stem cell transplantation developed ARDS sooner than allogeneic stem cell transplantation.

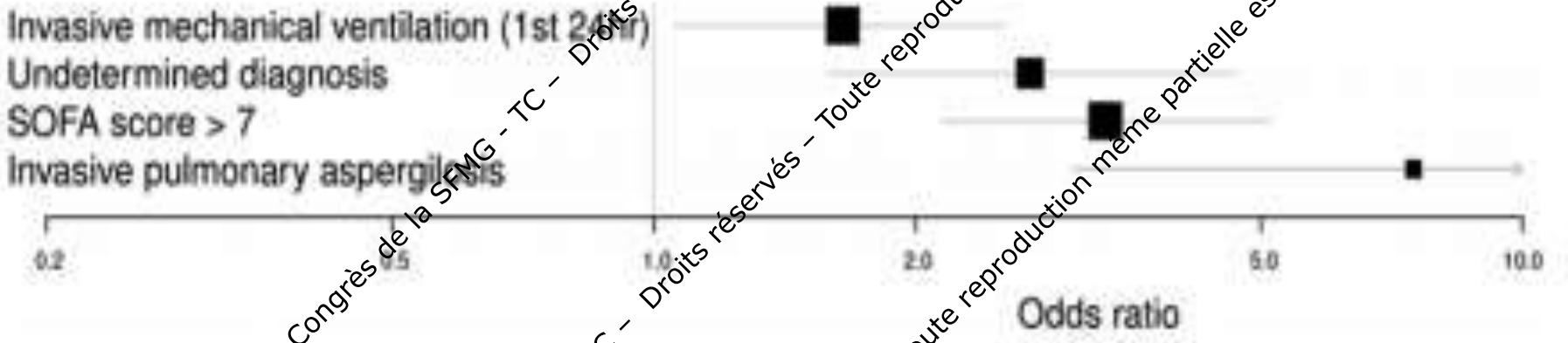
Time to ARDS development following hematopoietic stem cell transplantation for allogeneic and autologous transplants.



Overall survival following hematopoietic stem cell transplantation in patients who ARDS vs those who did not.

Increased mortality in hematological malignancy patients with acute respiratory failure from undetermined etiology: a Groupe de Recherche en Réanimation Respiratoire en Onco-Hématologie (Grrr-OH) study

Contejean et al. Ann. Intensive Care (2016) 6:102



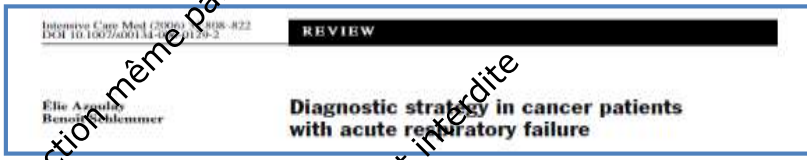
Multivariable analysis of risk factors for hospital mortality.

Box size is proportional to the accuracy of the estimate.

Hémopathie maligne ou cancer

Stratégie diagnostique d'une IRA

- L'approche D.I.R.E.C.T :
  - **D**élai(s) d'apparition des symptômes respiratoires
  - **I**mmunodépression
  - Aspects **R**adiologiques
  - **E**xpérience clinique et littérature
  - Tableau **C**linique
  - **T**omodensitométrie (scanner coupes fines)


Intensive Care Med (2006) 32:808–822
DOI 10.1007/s00134-006-0120-2

REVIEW

Élie Azoulay
Benoît Schlemmer

Diagnostic strategy in cancer patients with acute respiratory failure


Thorax 2003;58:511–517

Occasional reviews

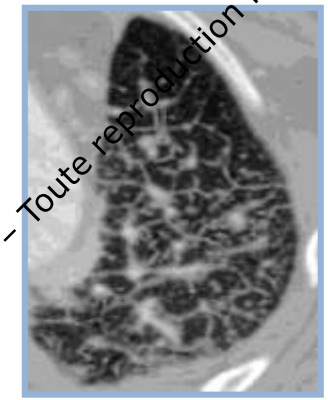
A persistent challenge: the diagnosis of respiratory disease in the non-AIDS immunocompromised host

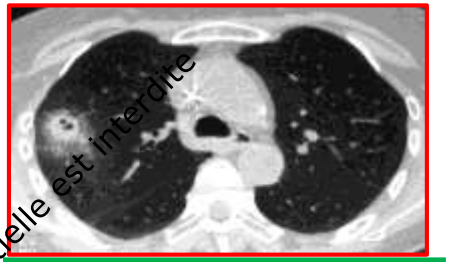
Charles Mayaud, Jacques Cadranel

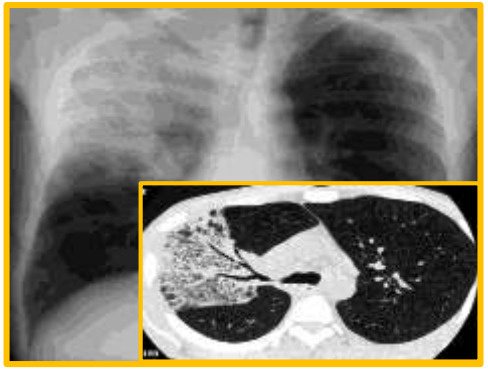
Hémopathie maligne, IRA

Orientation diagnostique selon la Radio ou le (CT) scanner

Lésion scannographique	Orientation diagnostique
Alvéolaire	
Localisé (lobaire ou segmentaire)	Infection bactérienne
Diffus	OAP, hémorragie intra-alvéolaire
Interstitiel et/ou verre dépoli	
Verre dépoli diffus ou patchy	OAP, pneumocystose, hémorragie intra-alvéolaire
Verre dépoli péri-nodulaire (signe du halo)	Aspergillose invasive
Verre dépoli centro-nodulaire (halo inversé)	Infections fongiques invasives (dont aspergillose)
Verre dépoli en pavé	Protéinose alvéolaire, pneumocystose
Verre dépoli centro-lobulaire	Hémorragie alvéolaire
Interstitiel diffus d'apparition rapide	Pathologie virale, OAP
Interstitiel diffus d'apparition lente	Cancer bronchique avec obstruction lymphatique, lymphangite carcinomateuse
Nodules	Métastases, lymphome, aspergillose, embols septiques
Cavitation	
Unique	Abcès bactérien, mycobactériose, tumeur excavée
Multiples	Abcès multiples, mycobactériose, métastases, aspergillome
Atélectasie	Processus tumoral endo- ou extra-bronchique





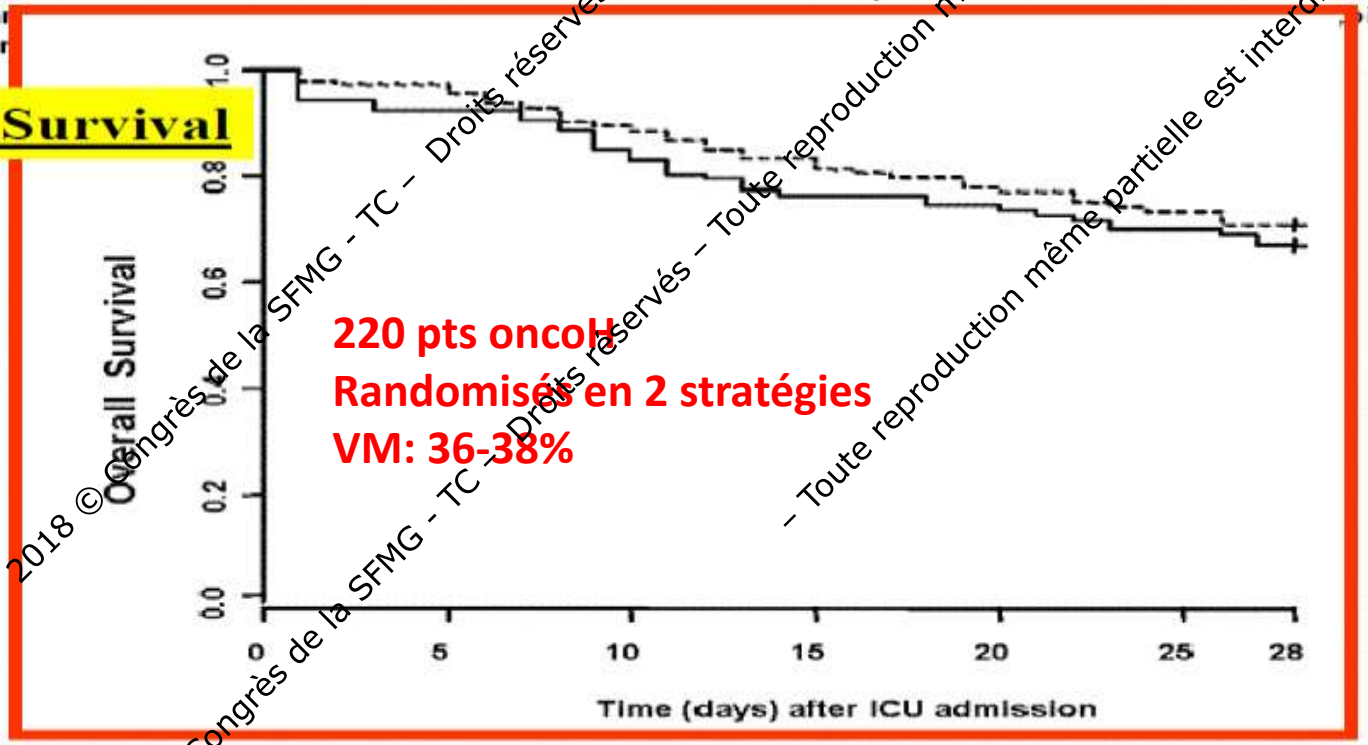


Diagnostic Strategy for Hematology and Oncology Patients with Acute Respiratory Failure

Randomized Controlled Trial

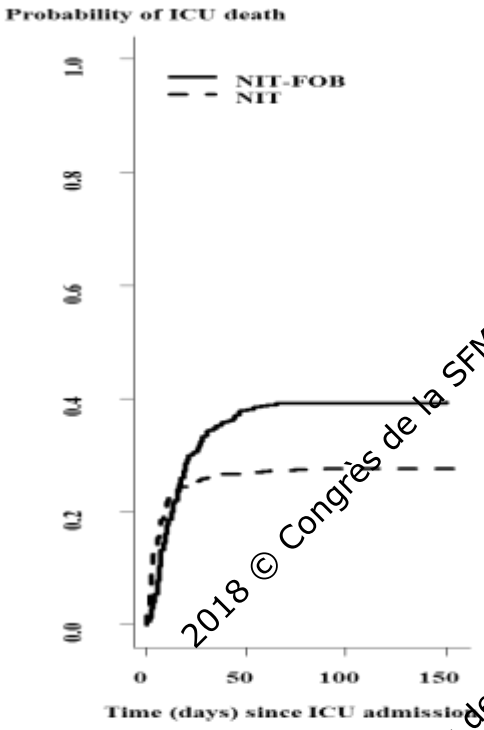
Élie Azoulay[1], Djamel Mokart[2], Jérôme Lambert[3], Virginie Lemiale[4], Antoine Rabbat[5], Achille Kouatchet[6], François Vincent[7], Didier Gruson[8], Fabrice Bruneel[9], Géraldine Epinette-Branche[1], Ariane Lebrie[1], Rebecca Har... ...is Blot[14], Sylvie Chevr...

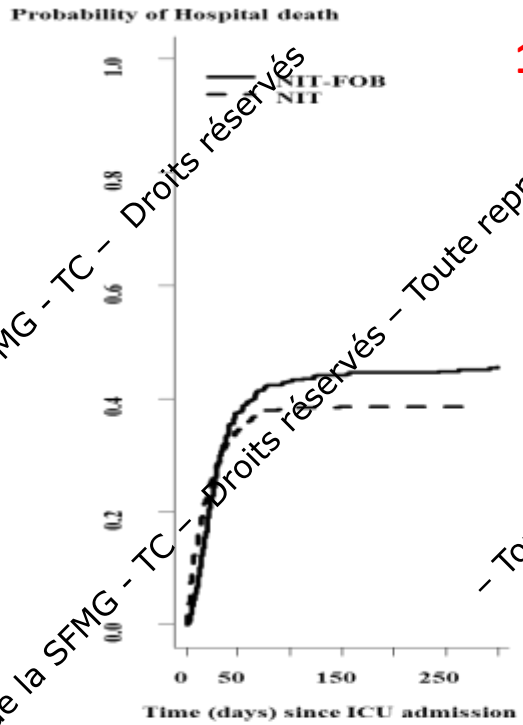
D28 Survival



220 pts oncoH
Randomisés en 2 stratégies
VM: 36-38%

Diagnosis and Outcome of Acute Respiratory Failure in Immunocompromised after Bronchoscopy (étude ancillaire EFRAIM)





1587 immunodépr. dont 939 hpathies

2015-16, 62 ICU de 16 pays

969 (61%) NIT, 618 (39%) NIT +FOB

Fib. Bron

apport diagnostique: 27%

apport thérapeutique: 38%

Mortalité Réa: 40,1 vs 27,6%, p<0,0001

Mortalité Hôp: 49 vs 41%, p=0,003

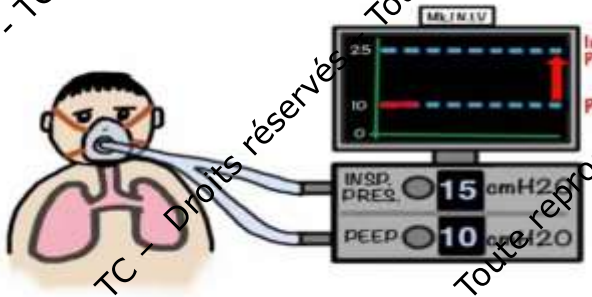
Risque de mortalité (Score de propension)
odd ratio 1,41 (1,08-1,81)

Hémopathie maligne

Prise en charge d'une IRA

Les options…

VS



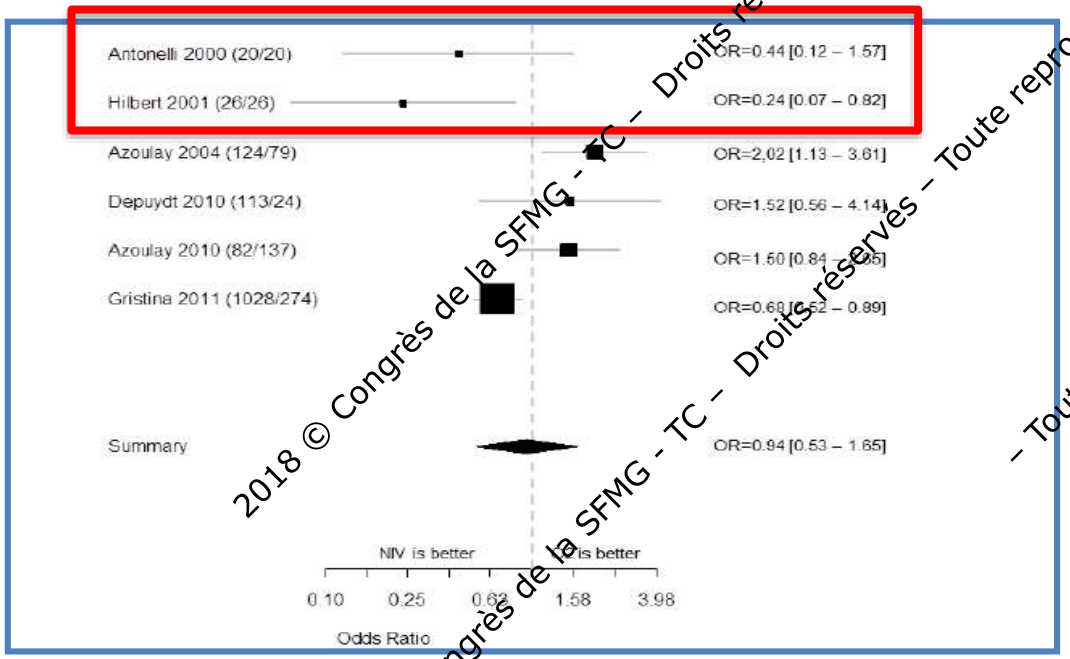
VS

High-Flow-Nasal-Cannula Optiflow™

HÉMOPATHIES MALIGNES

La ventilation non invasive

Non-invasive mechanical ventilation in hematology patients with hypoxemic acute respiratory failure: a false belief?



Azoulay, Bone Marrow Transplantation, 2011

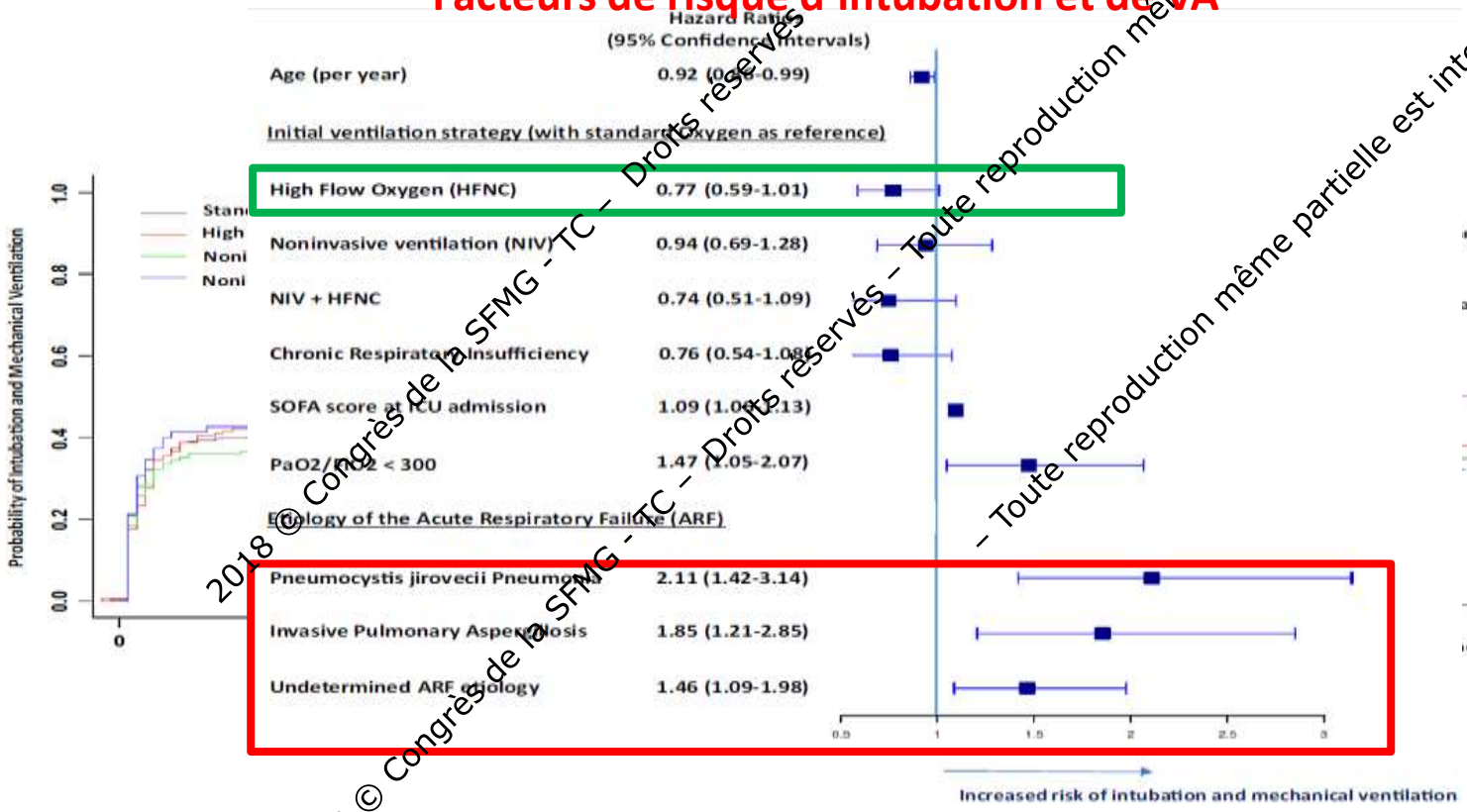
Predictors of failure of NIV in hypoxemic patients
•Higher illness severity at baseline reflected by SAPSII
•Higher RR under NIV
•Later initiation of NIV after ICU admission
•Need vasopressors
•Need RRT
•Presence de ALI/ARDS

Bello, Curr Opi Crit Care 2012

Acute hypoxemic respiratory failure in immunocompromised patients: the Efraim multinational prospective cohort study

Intensive Care Med (2017) 43:1808–1819

Facteurs de risque d'intubation et de VA

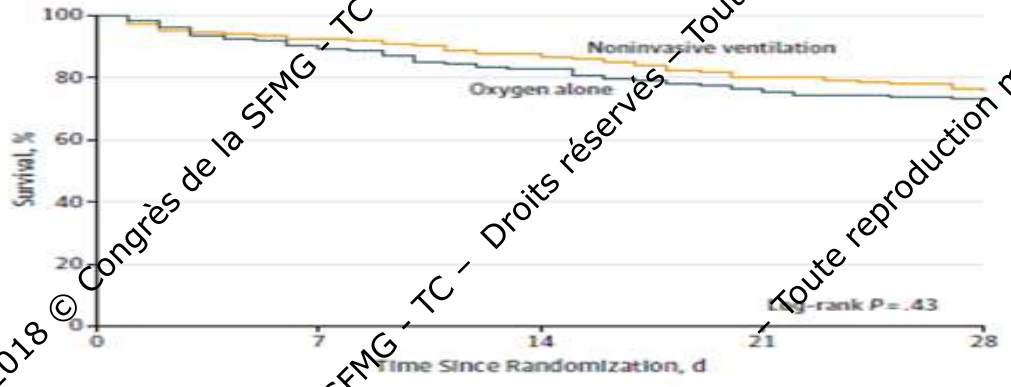


Original Investigation | CARING FOR THE CRITICALLY ILL PATIENT

Effect of Noninvasive Ventilation vs Oxygen Therapy on Mortality Among Immunocompromised Patients With Acute Respiratory Failure

A Randomized Clinical Trial

Virginie Lemiale, MD; Djamel Mokart, MD; Matthieu Resche-Rigon, MD, PhD; Frédéric Pène, MD, PhD; Julien Mayaux, MD; Etienne Faucher, MD; Martine Nyunga, MD; Christophe Girault, MD, PhD; Pierre Perez, MD; Christophe Guitton, MD, PhD; Kenneth Ekpe, MD; Achille Kouatchet, MD; Igor Théodose, MS; Dominique Benoit, MD, PhD; Emmanuel Canet, MD; François Barbier, MD, PhD; Antoine Rabbat, MD; Fabrice Bruneel, MD; Francois Vincent, MD; Kada Klouche, MD, PhD; Kontar Loay, MD; Eric Mariotte, MD; Lila Bouadma, MD, PhD; Anne-Sophie Moreau, MD; Amélie Seguin, MD; Anne-Pascale Meert, MD, PhD; Jean Reignier, MD, PhD; Laurent Papazian, MD, PhD; Ilham Mehzari, MD; Yves Cohen, MD, PhD; Maleka Schenck, MD; Rebecca Hamidfar, MD; Michael Darmon, MD, PhD; Alexandre Demoule, MD, PhD; Sylvie Chevret, MD, PhD; Elie Azoulay, MD, PhD; for the Groupe de Recherche en Réanimation Respiratoire du patient d'Onco-Hématologie (GRRR-OH)



374 pts
immunocompromised patients with acute respiratory failure receiving either early noninvasive ventilation or oxygen only.

JAMA. 2015;314(16):1711-1719. doi:10.1001/jama.2015.12402
Published online October 7, 2015.

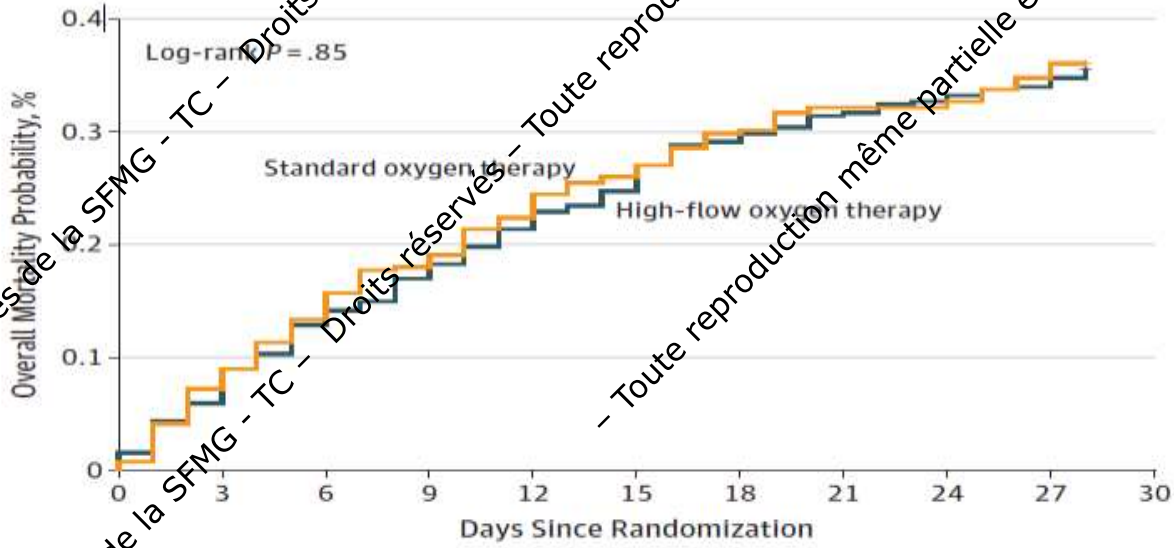
JAMA | Original Investigation | CARING FOR THE CRITICALLY ILL PATIENT

Effect of High-Flow Nasal Oxygen vs Standard Oxygen on 28-Day Mortality in Immunocompromised Patients With Acute Respiratory Failure

The HIGH Randomized Clinical Trial

Elie Azoulay, MD, PhD; Virginie Lemiale, MD; Djamel Mokart, MD, PhD; Saad Nseir, MD, PhD; Laurent Argaud, MD, PhD; Frédéric Pène, MD, PhD; Loay Kontar, MD; Fabrice Bruneel, MD; Kada Klouche, MD, PhD; François Barbier, MD, PhD; Jean Reignier, MD, PhD; Lilia Berrahil-Medien, MD; Guillaume Louis, MD; Jean-Michel Constantin, MD, PhD; Julien Mayaux, MD; Florent Wallet, MD; Achille Kouatchet, MD; Vincent Peigne, MD; Igor Théodose, MS; Pierre Perez, MD; Christophe Girault, MD; Samir Jaber, MD, PhD; Jordana Oziel, MD; Martine Nyunga, MD; Nicolas Terzi, MD, PhD; Lila Bouadma, MD, PhD; Christine Lebert, MD; Alexandre Lautrette, MD, PhD; Naike Bige, MD, PhD; Jean-Herlé Raphalen, MD; Laurent Papazian, MD, PhD; Michael Darmon, MD, PhD; Sylvie Chevret, MD, PhD; Alexandre Demoule, MD, PhD

JAMA. doi:10.1001/jama.2018.14282
Published online October 24, 2018.



No. at risk

High-flow oxygen therapy	388	365	338	322	305	292	275	266	261	256	0
Standard oxygen therapy	388	360	336	318	301	287	272	263	263	253	0

HÉMOPATHIES MALIGNES et Greffe MO

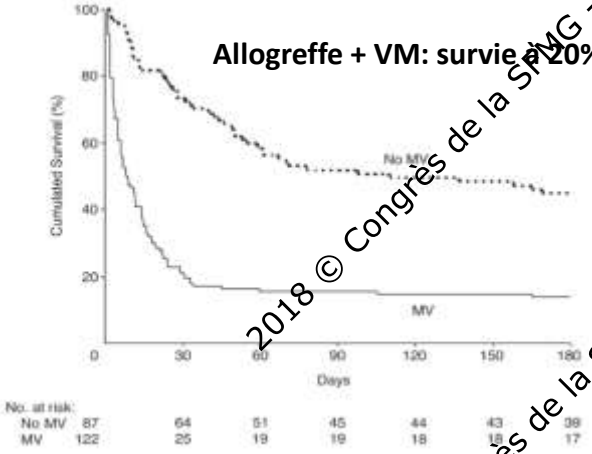
Ventilation Mécanique: délai de VM

La ventilation Mécanique:

2 facteurs déterminants: **délai** entre la greffe de moelle et la prise en charge en ventilation

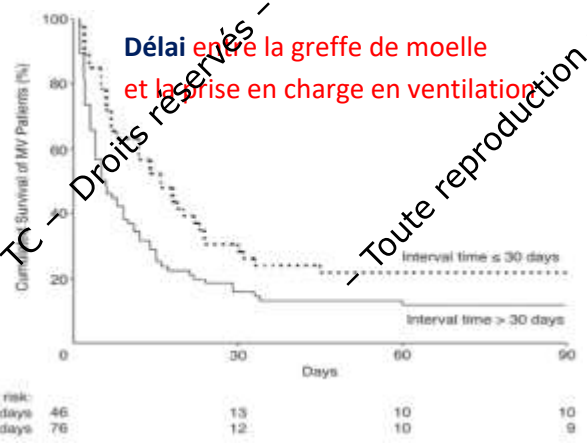
durée de la ventilation

Allogreffe + VM: survie à 20%

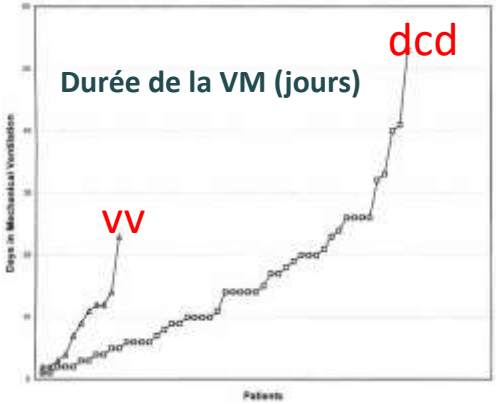


Pène, JCO 2015

Délai entre la greffe de moelle
et la prise en charge en ventilation



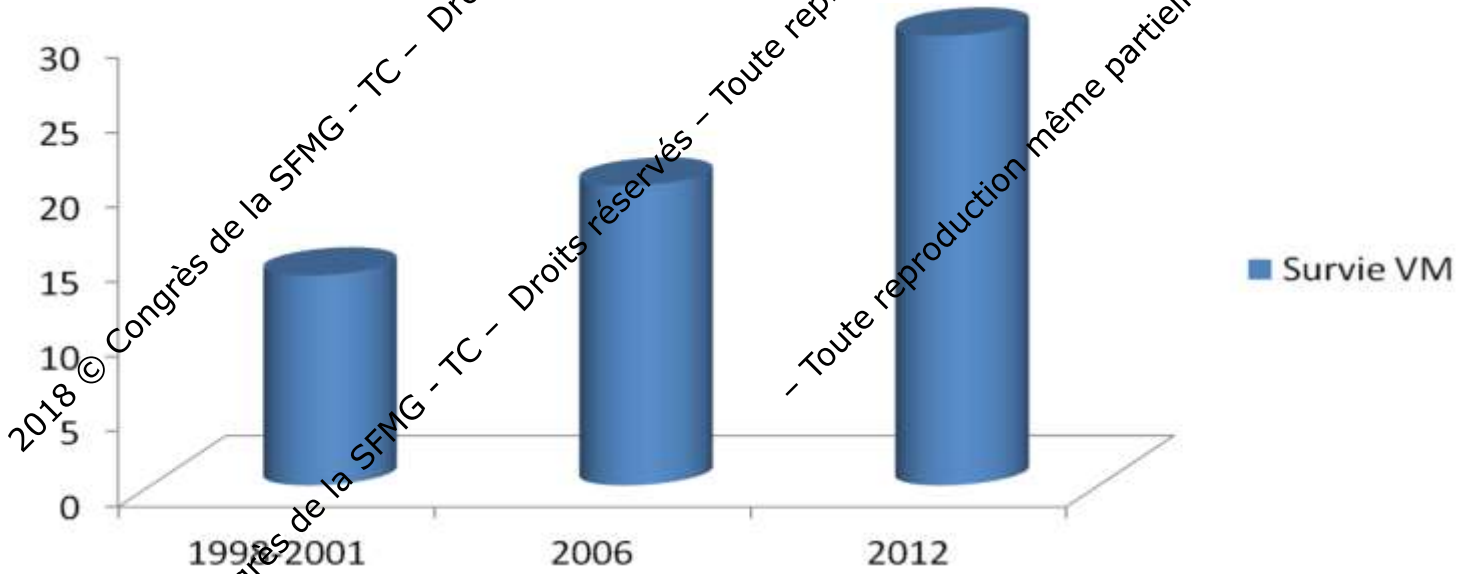
CCM 2000;28:1014



HÉMOPATHIES MALIGNES et Greffe MO

Evolution de la survie des patients ventilés 1998-2012

Cependant, la ventilation Mécanique ne doit pas être un frein!



Characteristics and Outcome of Patients After Allogeneic Hematopoietic Stem Cell Transplantation Treated With Extracorporeal Membrane Oxygenation for Acute Respiratory Distress Syndrome

P Wohlfarth et al. Crit Care Med 2017; 45:e500–e507

Variable	All Patients ($n = 37$)	Nonsurvivors ($n = 30$)	Survivors ($n = 7$)	
Underlying condition				0.000947
Acute leukemia	22 (59)	21 (70)	1 (14)	
Lymphoma	5 (14)	5 (17)	0	
Myelodysplastic syndrome	3 (8)	0	3 (43)	
Other malignant condition	4 (11)	2 (7)	2 (29)	
Nonmalignant disease	3 (8)	2 (7)	1 (14)	
Conditioning therapy[a]				0.27
Myeloablative	27 (79)	24 (83)	3 (60)	
Nonmyeloablative	7 (21)	5 (17)	2 (40)	
Stem cell source				1.0
Peripheral blood	27 (73)	21 (70)	6 (86)	
Bone marrow	7 (19)	6 (20)	1 (14)	
Cord blood	3 (8)	3 (10)	0	
Donor type				1.0
Unrelated donor	23 (62)	19 (63)	4 (57)	
Related donor	14 (38)	11 (37)	3 (43)	
Remission status at ICU admission[b]				1.0
Complete remission	27 (79)	22 (79)	5 (83)	
No remission, after engraftment	2 (6)	2 (7)	0	
No remission, prior engraftment	5 (15)	4 (14)	1 (17)	
GvHD at ICU admission				
Acute GvHD	5 (14)	5 (17)	0	0.56
Chronic GvHD	8 (22)	6 (20)	2 (29)	0.63
Immunosuppressive therapy during ICU				
Any immunosuppressive therapy	31 (84)	28 (93)	3 (43)	0.006823
Corticosteroids	22 (59)	20 (67)	2 (29)	
Calcineurin inhibitor	22 (59)	20 (67)	2 (29)	
Mycophenolate mofetil	8 (22)	8 (27)	0	
Others	5 (14)	5 (17)	0	

37 Allo ARDS ECMO VV

(12 ICUs Europe),

146 (27-321) jours post-Allo

survie: 19%

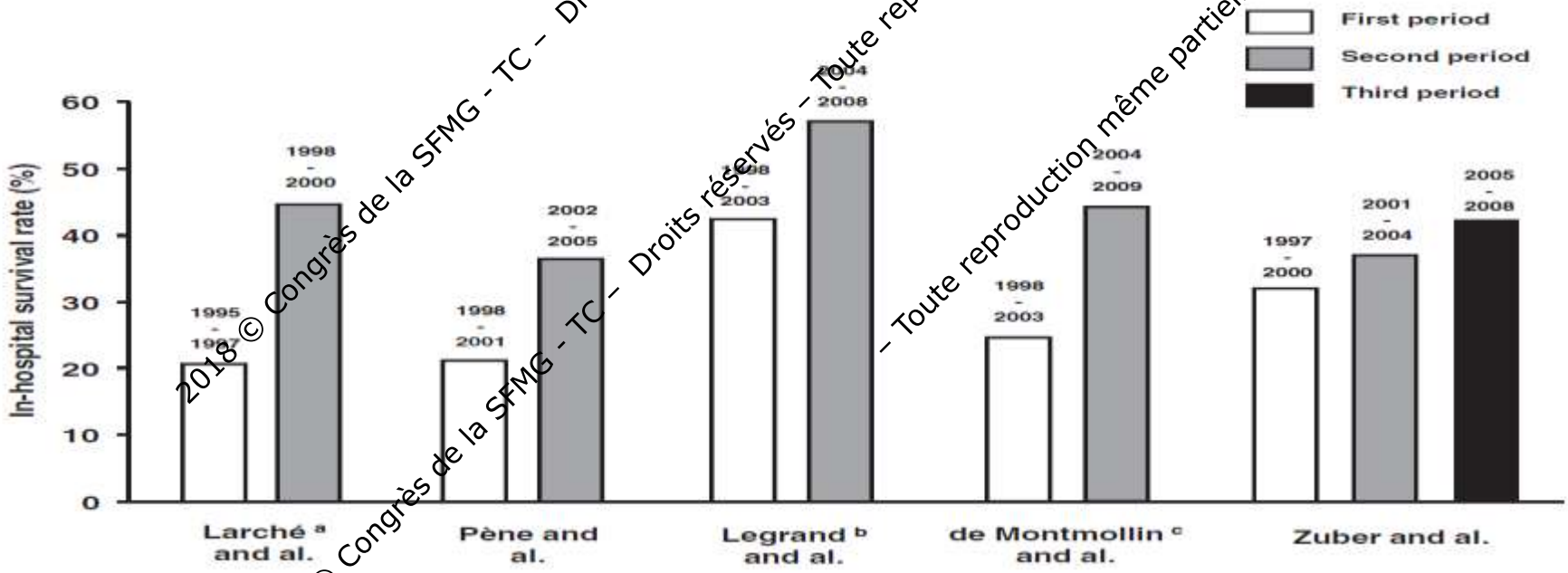
100 (dcd) vs 485 (vv) j post-Allo, p=0,01

ECMO should be discouraged for ARDS during the peri- or early posttransplant period.
we recommend
1) select patients with no additional organ dysfunctions and of refractory acute GvHD,
2) to early inform patients and families about the limited prognosis,
3) to discuss and respect their preferences with regards to end-of-life issues as a cornerstone of the decision process.

Hémopathies malignes, Infection

Temporal trends in survival of septic shock in patients with cancer

Azoulay E et al. Blood Reviews 29 (2015) 359–367

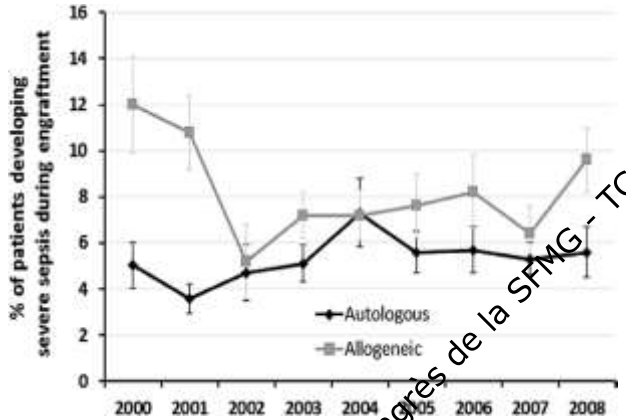


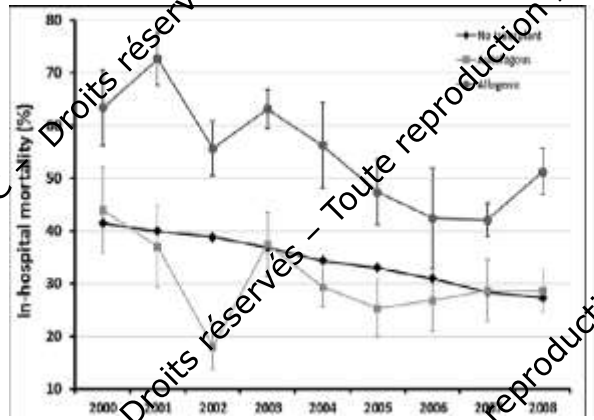
Severe Sepsis in Hematopoietic Stem Cell Transplant Recipients

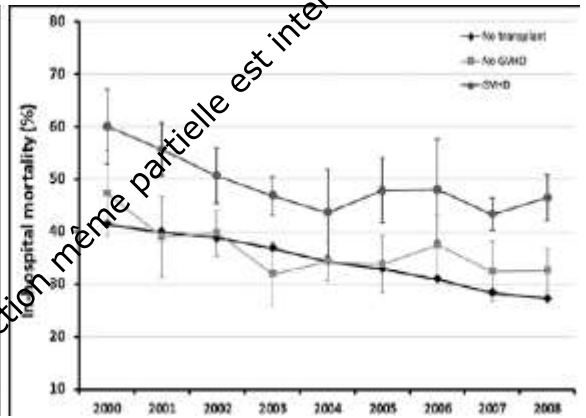
G Kumar et al. Crit Care Med 2015; 43:411–421

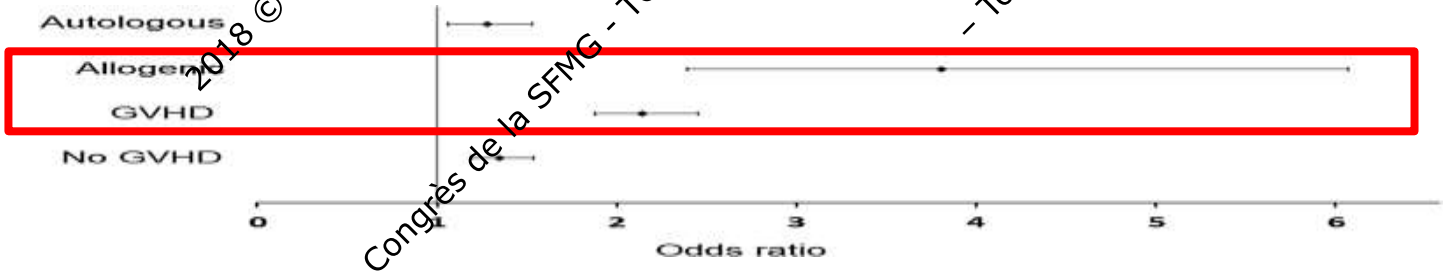
21,898 Greffe MO sepsis sévère (7,5%)

mortalité: Auto: 30%, Allo: 55%, GVH: 48%

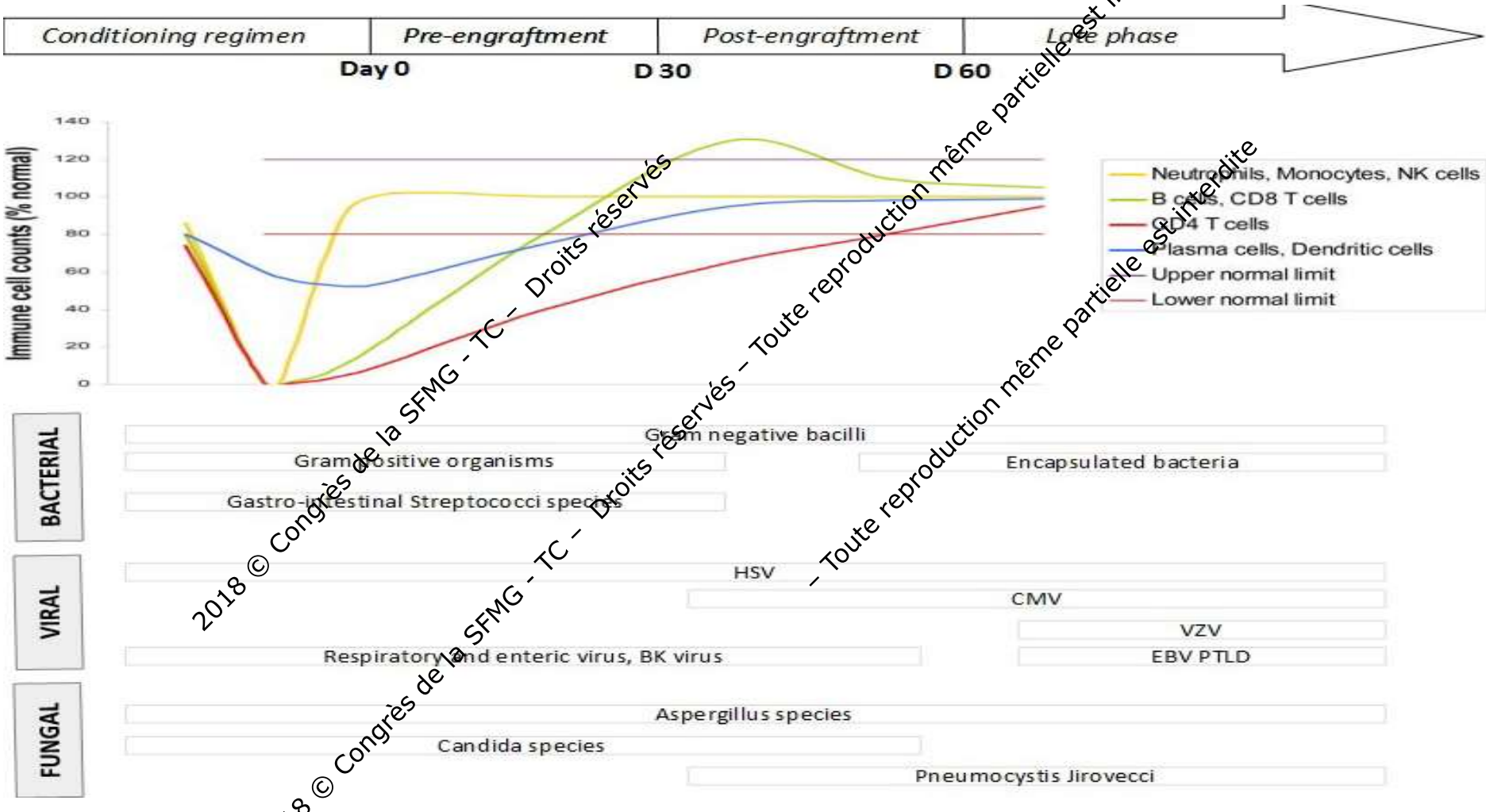








odds ratio of mortality in severe sepsis-HSCT admissions compared with nonHSCT.



Neutropenic cancer patients with severe sepsis: need for antibiotics in the first hour

Djamel Mokart
Colombe Saillard
Antoine Sannini
Laurent Chow-Chine
Jean-Paul Brun
Marion Faucher
Jean-Louis Blache
Didier Blaise
Marc Leone

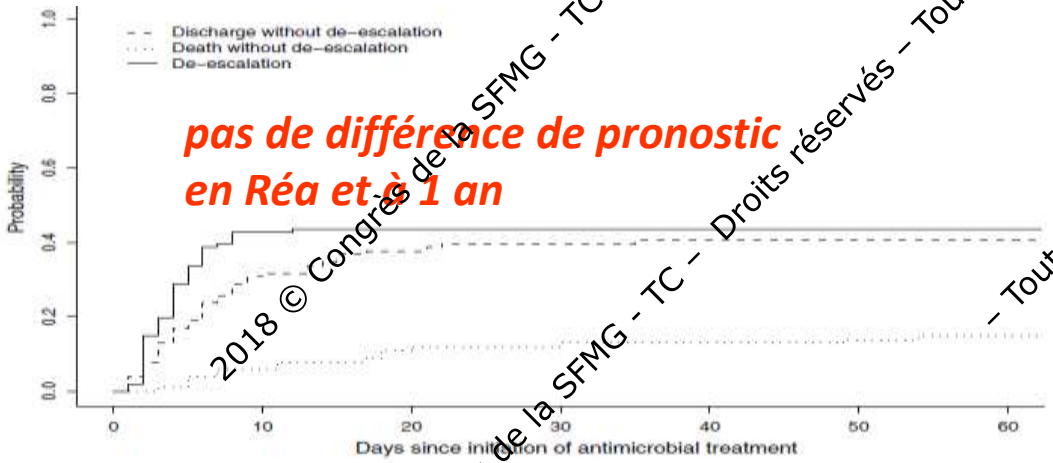
ICU mortality	Odds ratio	95 % confidence interval	*p*
Efficacy of the first antimicrobial treatment in the ICU			
Appropriate	1	Reference	
Inappropriate	6.4	1.6–26	0.01
Empirical	0.7	0.2–2.5	0.63
SOFA score at admission (per point)	1.4	1.2–1.6	<0.001
Non-fermentative Gram-negative bacilli	4.8	1.3–18	0.02
Interval between the first signs of sepsis in ICU and antimicrobial initiation >1 h	10	2.5–33	0.002

Intensive Care Med. 2014 Aug;40(8):1173-4

De-escalation of antimicrobial treatment in neutropenic patients with severe sepsis: results from an observational study

Mokart D et al; Intensive Care Med (2014) 40:41–49

Etude prospective observationnelle
101 pts neutropéniques avec sepsis sévère dont 44: désescalade AB (arrêt d'1 AB ou Blact avec un spectre étroit)
Documentation microbio: 63 pts



pas de différence de pronostic en Réa et à 1 an

Cumulative incidence of de-escalation, death in ICU without de-escalation, and discharge alive without de-escalation

Facteurs associés désescalade

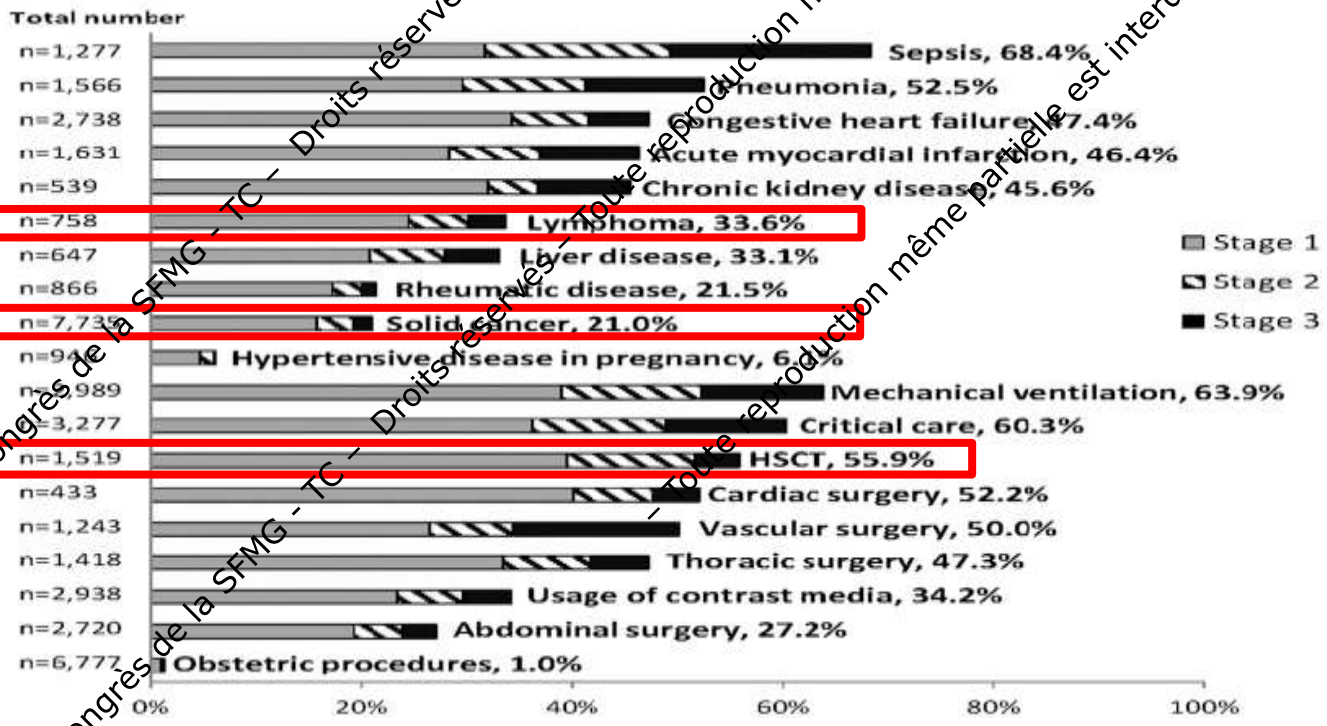
AB empirique adéquat: OR: 10.8
Choix empirique antipyo: OR:10.8

Incidence of AKI according to the KDIGO definition across clinical settings.

Cohorte rétrospective 2010

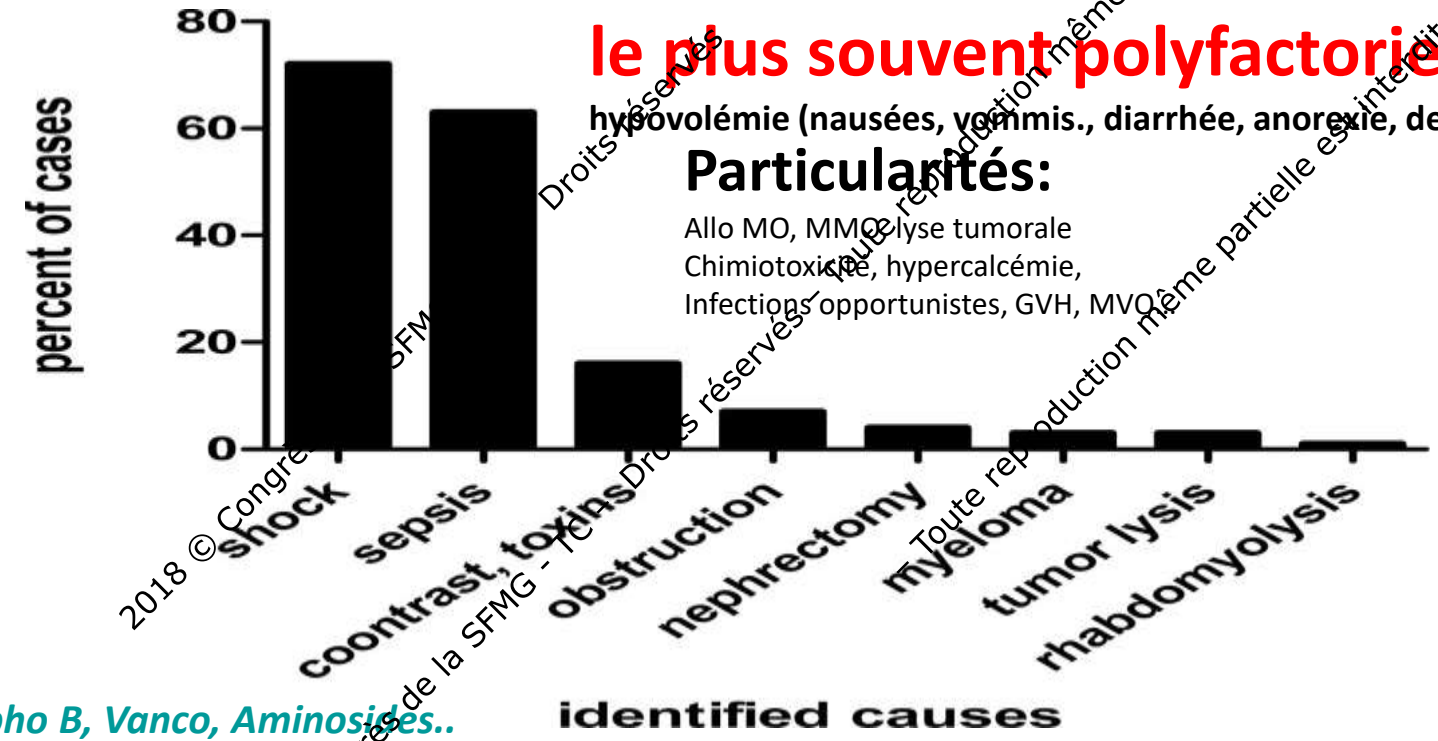
31,970 Hosp

IRA :18.3%



Clin J Am Soc Nephrol 9: 12–20, 2014.

Causes of acute kidney injury in critically ill cancer patients.



le plus souvent polyfactorielle

hypovolémie (nausées, vommis., diarrhée, anorexie, desh..)

Particularités:

Allo MO, MMC, lyse tumorale
Chimiotoxicité, hypercalcémie,
Infections opportunistes, GVH, MVO

Ampho B, Vanco, Aminosides..

Soares et al. J Clin Oncol. 2006;24:4003–4010.

Acute kidney injury in critically ill patients with haematological malignancies:

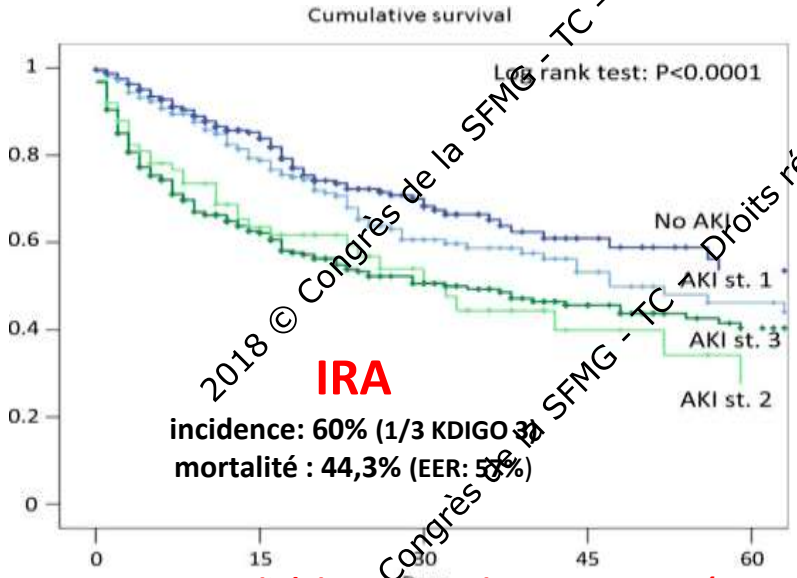
results of a multicentre cohort study from the Groupe de Recherche en Reanimation Respiratoire en Onco-Hematologie

M Darmon et al. Nephrol Dial Transplant 2015: 2006–2013

17 Réa France Belgique 2010-2, 1009 Hem.
Mortalité: 38%
Motif H: IRA 30%
338 ss IRA, 671 (61%) IRA

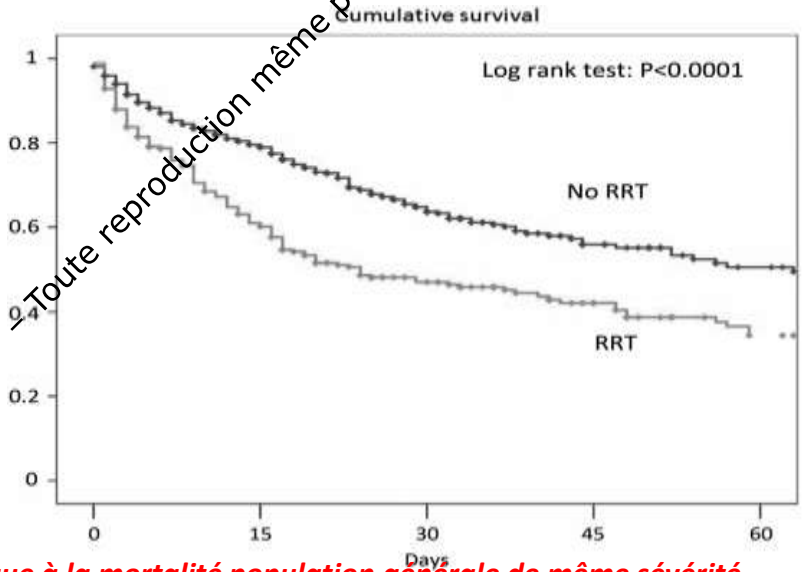
Cumulative survival

according to AKI and its severity



IRA
incidence: 60% (1/3 KDIGO 3)
mortalité : 44,3% (EER: 5%)

according to RRT requirement



La mortalité des pts onco-hemato avec Ira (EER ou pas) identique à la mortalité population générale de même sévérité

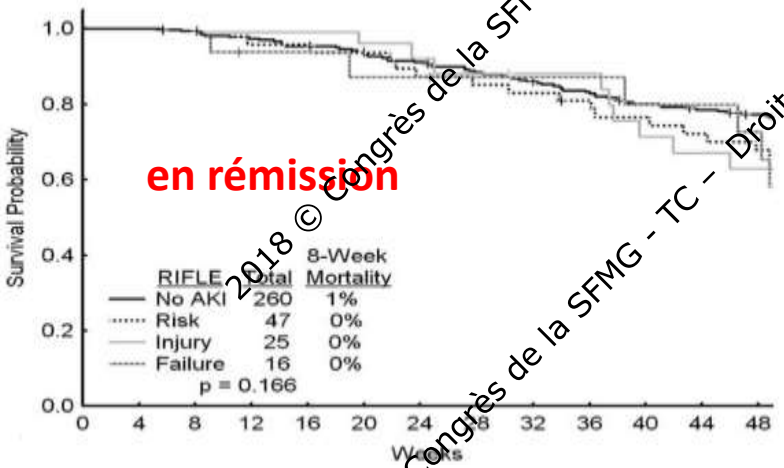
Predictors and Outcome of Acute Kidney Injury in Patients With Acute Myelogenous Leukemia or High-Risk Myelodysplastic Syndrome

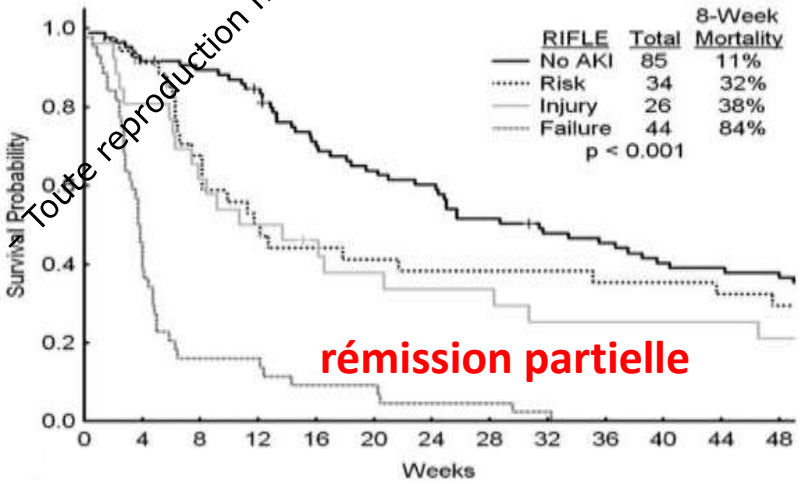
Lahoti A et al. Cancer. 2010; 116(17): 4063–4068.

537 pts LAM ou SMD traités 99-2007

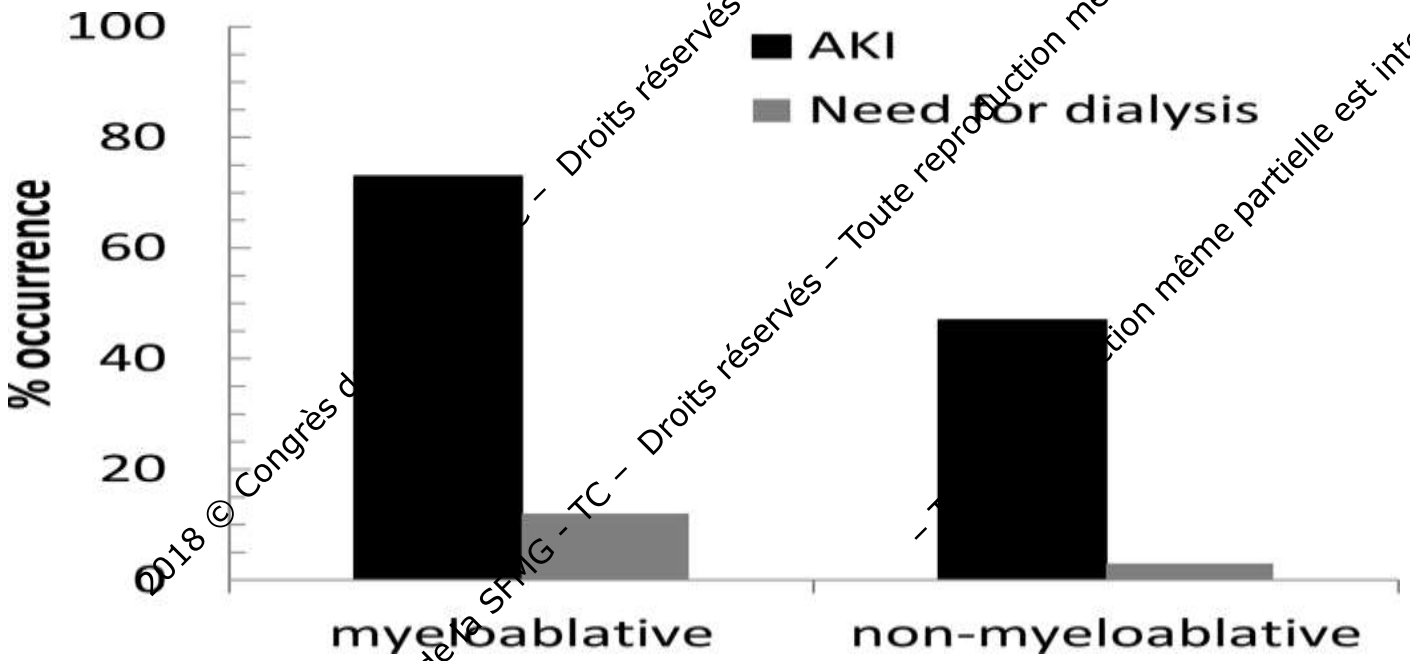
187 IRA (36%)

Mortalité à 8 semaines: pas d'IRA: 4%; IRA R: 14%, F: 62%





The occurrence of acute kidney injury after HSC transplantation.



5% des alloGreffes de Mo avec IRA → EER

Pacikh et al. Am J Kidney Dis. 2005;45:502–509).

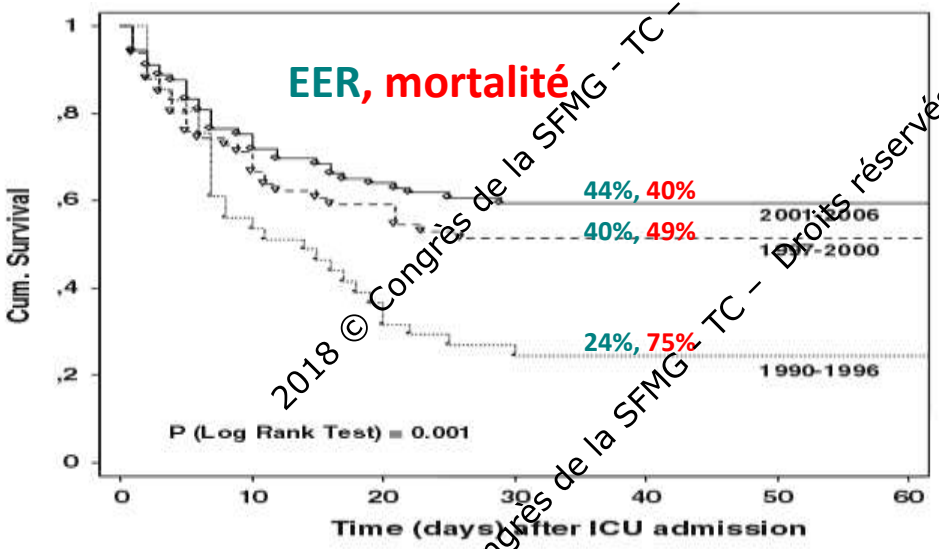
Vincent Peigne
Kateřina Rusinová
Lionel Karlin
Michael Darmon
Jean-Paul Fermand
Benoît Schlemmer
Élie Azoulay

Continued survival gains in recent years among critically ill myeloma patients

Intensive Care Med (2009) 35:512–518
DOI 10.1007/s00134-008-1320-4

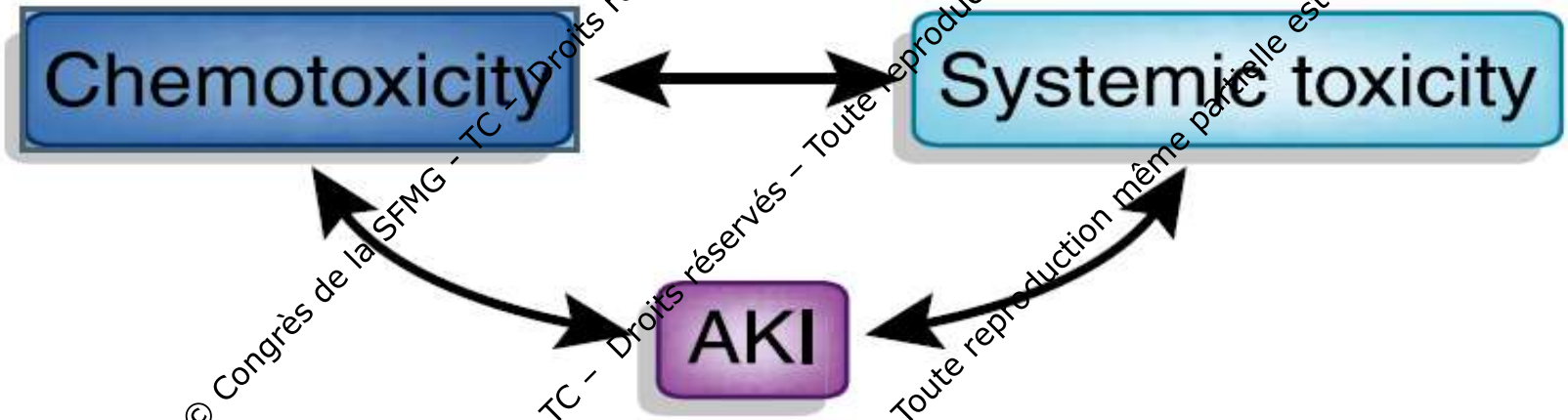
ORIGINAL

196 pts MMO 90-06



Parameters	Odds ratio	95% CI	*P* value
Poor chronic health status[a]	2.27	1.04–4.99	0.04
Need for vasopressors	2.57	1.12–5.86	0.02
Need for mechanical ventilation	4.33	1.86–10.10	0.0007
Admission to the ICU for complication of myeloma	2.77	1.13–6.79	0.02
Admission to the ICU during the second period (1996–2001)	0.28	0.10–0.84	0.02
Admission to the ICU during the third period (2002–2006)	0.20	0.06–0.64	0.007
Admission to the ICU less than 2 days after hospital admission	0.41	0.19–0.89	0.02

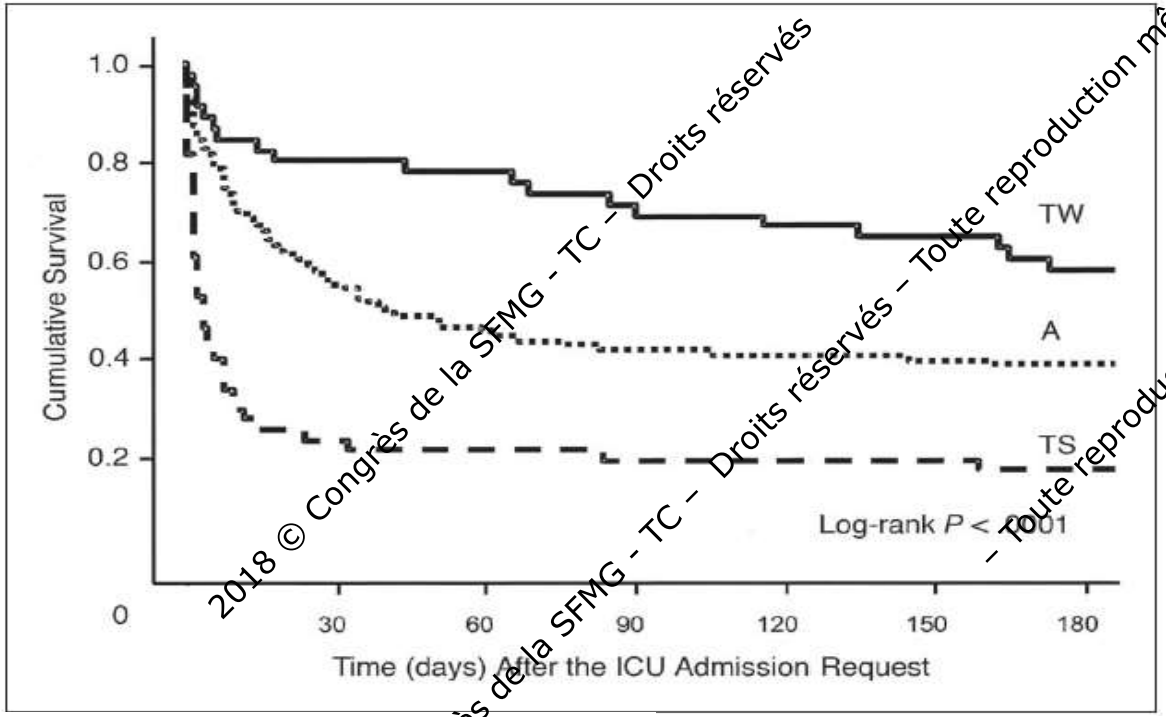
Chemotoxicity and kidney injury



This vicious cycle leads to enhanced systemic toxicity.

Hémopathies en Réanimation

Qui admettre?



VOLUME 23 · NUMBER 19 · JULY 1 2005

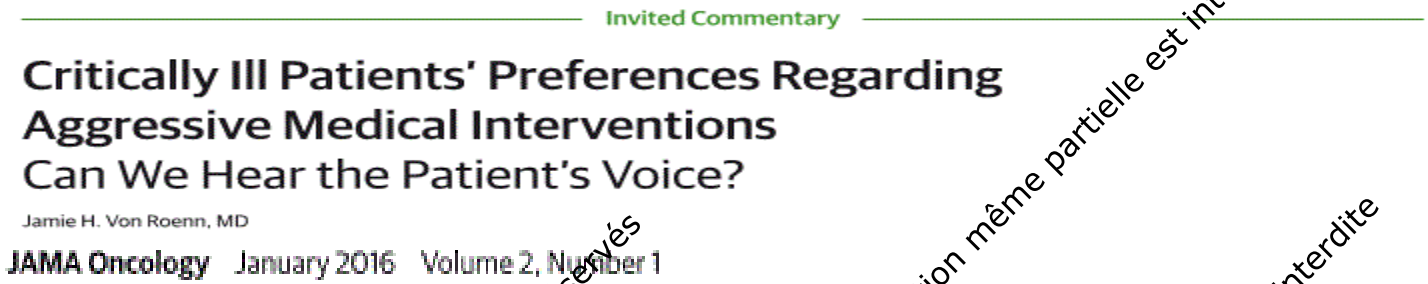
JOURNAL OF CLINICAL ONCOLOGY

TW= Trop bien pour la Réa

TS = trop grave pour la réa

A= Admis en Réa

La moitié des patients ne sont pas admis en réanimation



Invited Commentary

Critically Ill Patients' Preferences Regarding Aggressive Medical Interventions

Can We Hear the Patient's Voice?

Jamie H. Von Roenn, MD

JAMA Oncology January 2016 Volume 2, Number 1

Il s'agit de soigner et de prendre soin!

Care and take care!

En définitive,
le patient d'hématologie en Réanimation

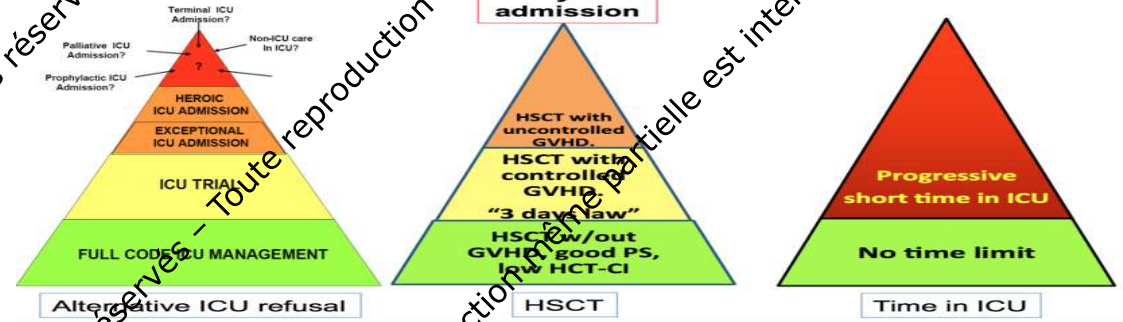
Je sais pourquoi je l'admets en Réa

full code
visée diagnostique
à titre palliatif
avec un plan de prise en charge
essai clinique

Je réévalue le patient J3, J5, J10, J15 ?

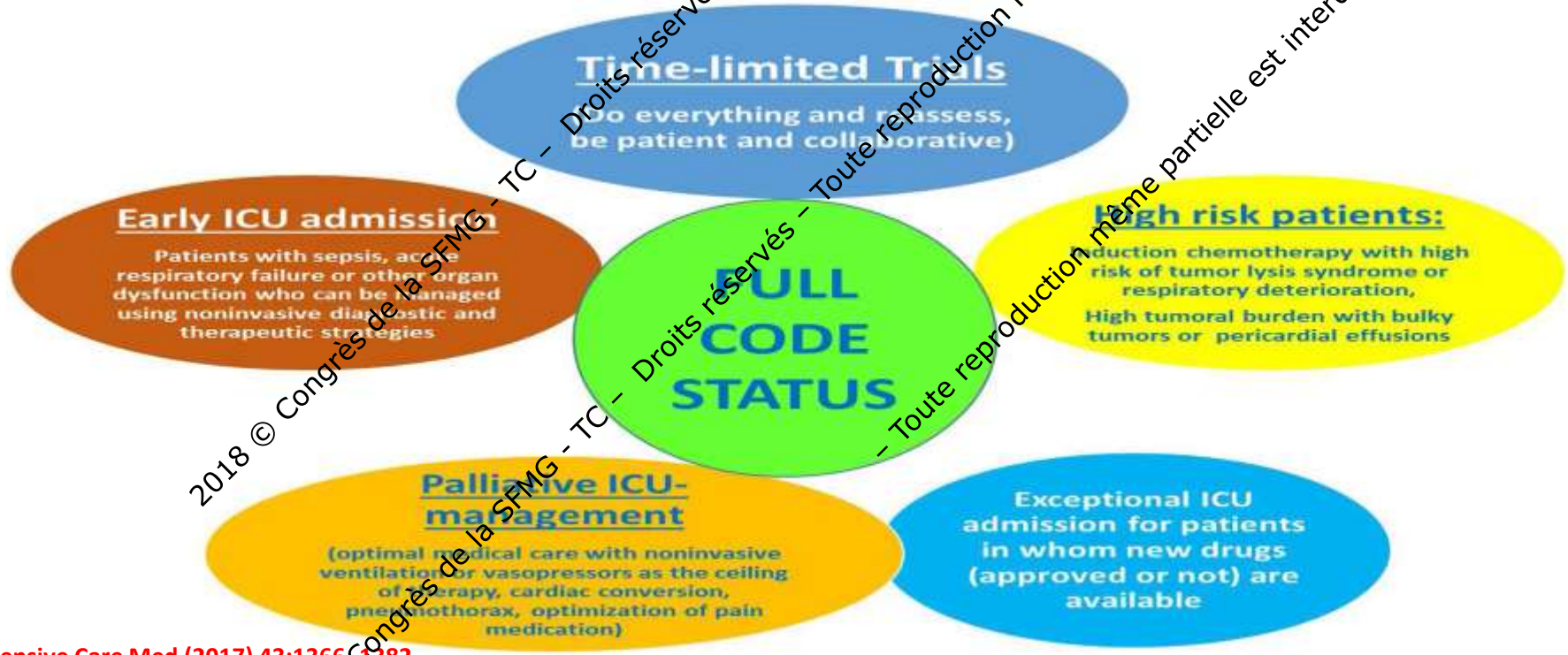
Je reste à l'écoute
(patient, famille, staff, hémato)

Je discute l'admission
Etat général préexistant très altéré, comorbidités+++
Espérance de vie courte
Allogreffe avec GVH 2-2 non contrôlée, corticodépendante (hépatique, pulmonaire)
MVO ?
SDRA sévère d'étiologie indéterminée
Défaillance multiviscérale
Réadmission après une réanimation «héroïque»
Défaillance rénale ou hépatique pouvant interdire toute thérapeutique ultérieure



Ni trop tard ni trop tôt
Early wearning score

New strategies of ICU admission in patients with cancer



Intensive Care Med (2017) 43:1366–1382

CONCLUSION

Meilleure sélection de patients : comorbidités, sévérité de maladie

Meilleure adhésion aux recommandations : remplissage vasculaire..

Meilleure collaboration interprofessionnelle: équipe référente

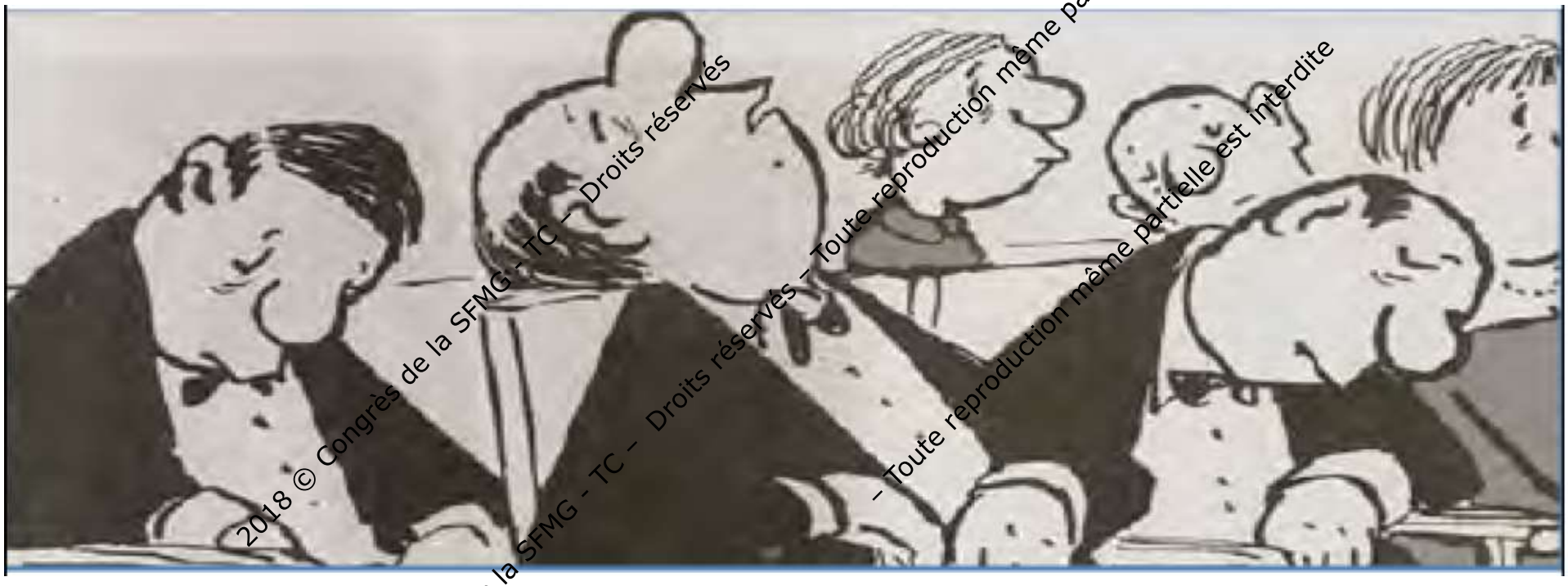
Détection précoce des patients à risque: système d'alerte

Triage : LATA vs. admission précoce en réa de patients avec un bon pronostic

expérience de l'équipe hémato-onco et réa

Le patient d'hématologie est un patient comme les autres!

Merci de votre attention



The ABCDE management rules for critically ill cancer patients

A
1. Do not decline ICU admission based on outdated prognostic factors (neutropenia, staging of the malignancy, etc...),
2. Do not delay ICU admission,
3. Pay attention to what is reversible in the acute condition,
4. Consider ICU admission for time limited trials. Spend time helping patients and relatives understand the goals of care,
5. Make the decision of ICU admission and set up the goals of care with hematologists and oncologists

A - ICU Admission

B
1. It is wrong to make decisions based only on age, without taking into account performance status and comorbidities,
2. It is wrong to state that severity scores should be used to decide when to start or pursue life saving interventions,
3. It is wrong to state that chemotherapy can only be started when the patient will get better
4. It is wrong to state that patients with neutropenia, autologous HSCT or advanced disease should not receive all life saving interventions
5. It is wrong to provide full life support to patients who are bedridden or have no life-span extending therapy

B - Beware False Beliefs

E
1. When comparing mortality across studies, check that patients received similar therapeutic intensity,
2. Mortality after ICU admission should be considered along with the number of patients NOT admitted to the ICU and mortality on oncology and hematology wards
3. The number of patients with undetermined etiology of organ dysfunction should be monitored,
4. The number of patients with newly diagnosed malignancies who receive chemotherapy in the ICU should be reported,
5. Long term mortality, disease control, toxic events, quality of life and long term remission should be reported

E - Evaluate

C
1. Initial oxygenation strategy and use of invasive or noninvasive ventilation
2. Up-to-date hemodynamic management and monitoring. Optimal resuscitation targets and timing
3. Avoid renal toxicity, offer renal replacement therapy when appropriate. Manage tumor lysis syndrome.
4. Understanding the etiology of organ dysfunction,
5. Daily discussion and rounds with hematologists and oncologists

C - Standard of Care

D - Day to Day Decisions

D
1. Check that the etiology of each organ dysfunction has been identified and treated,
2. Get everyone to understand the time needed for recovery and the signs of cure,
3. Avoid premature end-of-life decisions for time-limited trials,
4. Round with hematologists and oncologists to discuss patient evolution and expected outcomes
5. The ICU team, relatives and consultants must align their expectations about the goals of care. Palliative care consultants may be requested.

Intensive Care Med (2017) 43:1366–1382

IRA chez le patient d'onco-hématologie

Prise en charge

Manœuvres préventives

volémie, éviter néphrotoxiques

évaluation de la fonction rénale (AB, antifongiques)

identifier une chimio Toxique: arrêt, antidote (Metho) ou épuration, glucocorticoides (PD1)

EER

on n'en sait pas plus

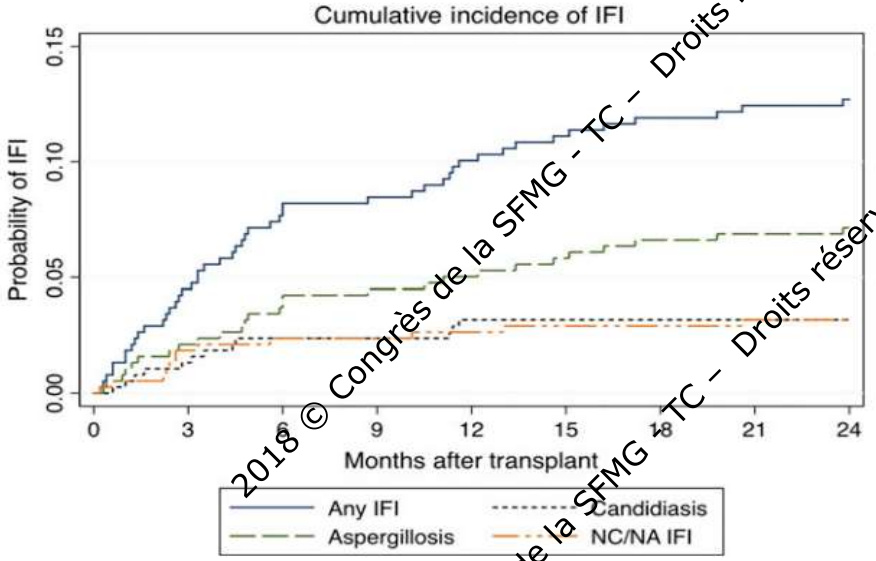
les mêmes questions se posent: timing, modalité, dose, sevrage

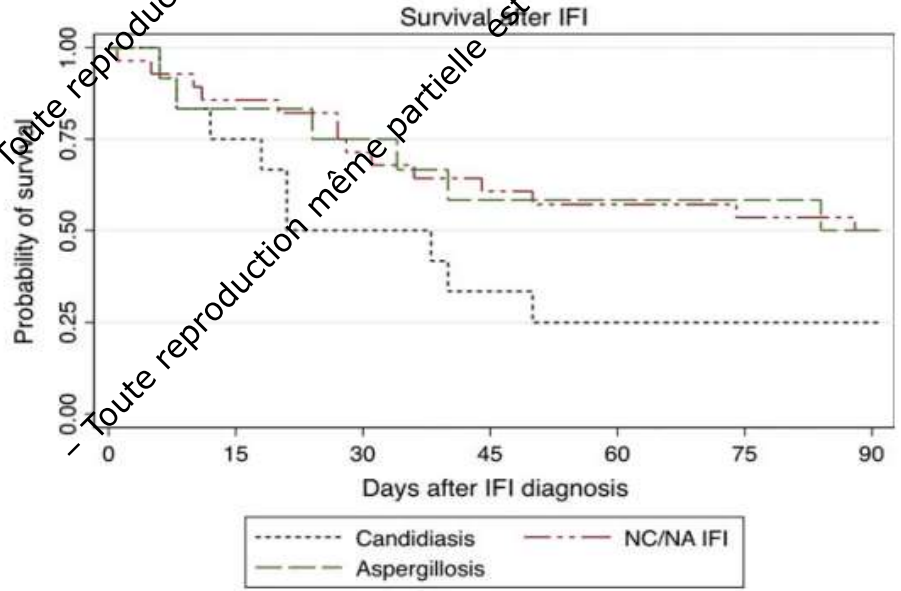
plus de complications (citrate?)

Recouvrement de la fonction rénale et prise en charge ultérieure?

Cumulative incidence of invasive fungal infection (IFI), aspergillosis, candidiasis and IFIs other than Candida/Aspergillus, by year of transplant.

D E. Corzo-Leon, et al. Mycoses, 2015, 58, 325–336





INSUFFISANCE RESPIRATOIRE AIGUE

- Détresse respiratoire aigue: 70% des causes d'admission
- Eléments d'appréciation:

  clinique, SaO_2, PaO_2/FiO_2, lactatémie, tomodensitométrie

- Etiologies:

  Infectieuses (60%): Pronostic intermédiaire

  Non infectieuses (20%)

  OAP très bon pronostic (indépendant du projet thérapeutique)

  Spécifiques, Autres…

  Aucune étiologie retrouvée (20%)

  Mauvais pronostic

- Deux types de ventilation:

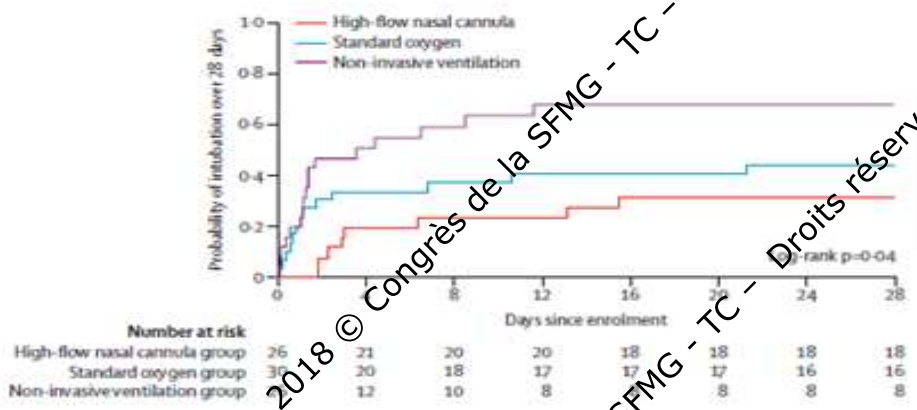
  ventilation non invasive

  ventilation conventionnelle

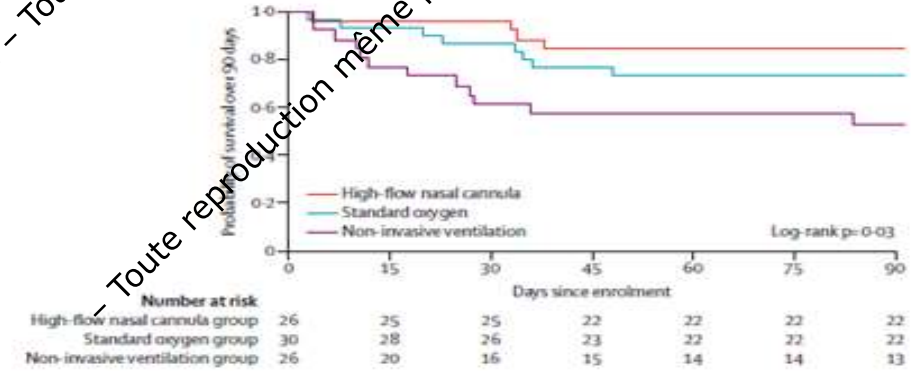
Effect of non-invasive oxygenation strategies in immunocompromised patients with severe acute respiratory failure: a post-hoc analysis of a randomised trial

Jean-Pierre Frat, Stéphanie Ragot, Christophe Girault, Sébastien Perbet, Gwénael Prat, Thierry Boulain, Alexandre Demoule, Jean-Damien Ricard, Rémi Coudroy, René Robert, Alain Mercat, Laurent Brochard, Arnaud W Thille, for the REVA network

thelancet.com/respiratory May 27, 2016



Probability of intubation at day 28 in patients in the non-invasive ventilation group versus standard oxygen and high-flow nasal cannula groups



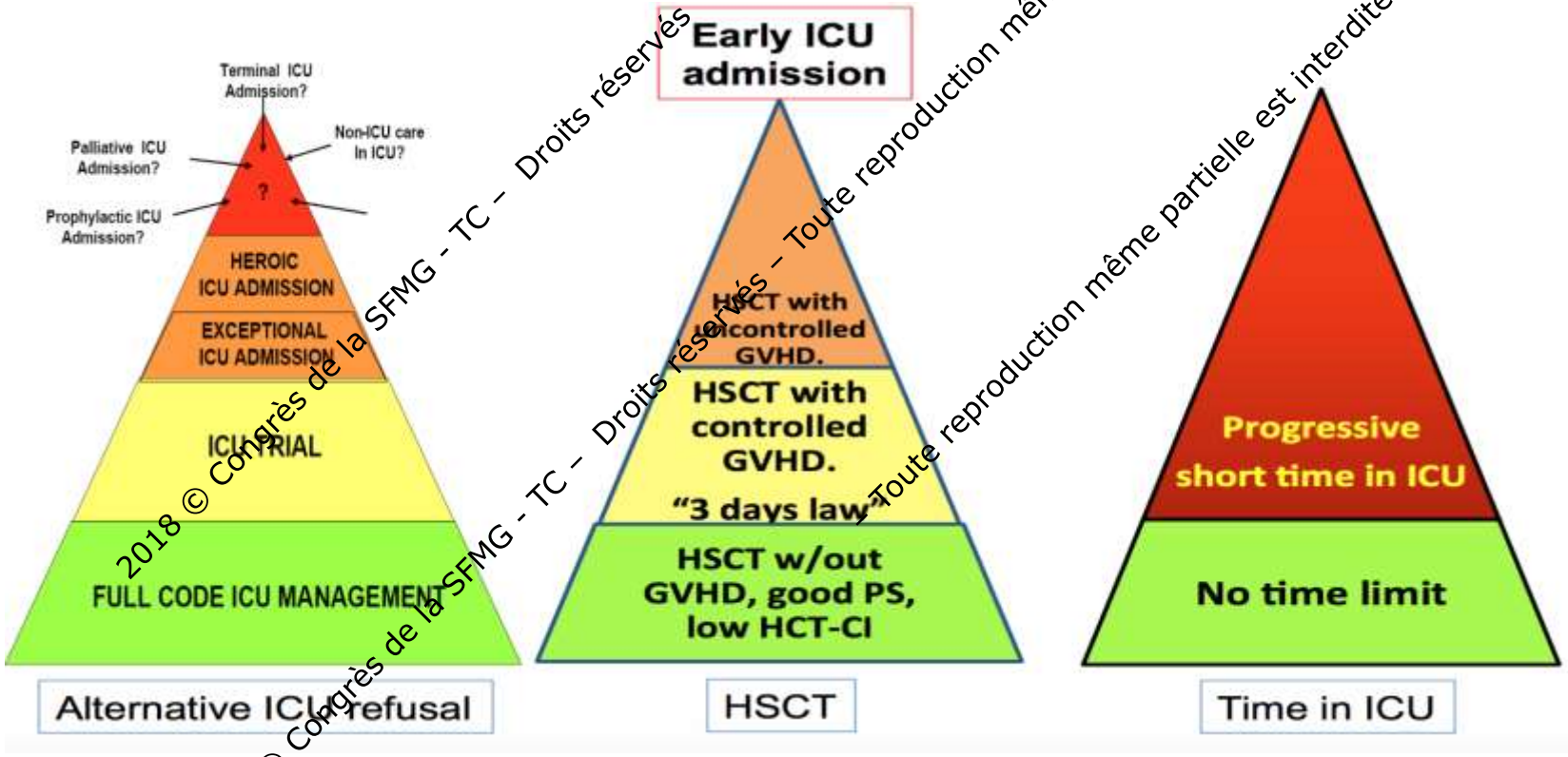
Probability of survival at day 90 in patients in the non-invasive ventilation group versus standard oxygen and high-flow nasal cannula groups

Components of the standard of care in critically ill patients with hematological malignancies

- **What to do**
  - *Optimal life support based on most recent data from general ICU patients*
  - *Noninvasive diagnostic and therapeutic strategies*
  - *Close collaboration between intensivists and hematologists*
- **What to Consider**
  - *New ICU admission policies (prophylactic ICU admission, palliative noninvasive ventilation)*
  - *Start induction chemotherapy in the ICU in high risk patients*
  - *Medical emergency teams*
  - *Minimally invasive (CT-driven), diagnostic procedures*
- **What to encourage**
  - *Early ICU admission*
  - *Improve our understanding of pathophysiology and of toxicities of newly released drugs*
  - *Cytoreduction therapy in hyperleukocytic AML*
  - *Combination therapy (aminoglycosides) in septic shock*
  - *Catheter withdrawal in septic shock from unknown origin*
  - *ICU trial*
  - *Rehabilitation programs*
  - *Respect patient's preferences and provide early in-ICU palliative care*
- **What not to do**
  - *Delayed ICU admission*
  - *Alkalinization in tumor lysis syndrome*
  - *Inappropriate use of nephrotoxic agents (contrast agents, antibiotics, etc…)*
  - *Prolonged noninvasive ventilation in hypoxemic patients meeting criteria for ARDS*
  - *Bronchoscopy and bronchoalveolar lavage in deeply hypoxemic patients for whom a noninvasive diagnostic test is available*
  - *Premature end-of-life decisions*
- **What to evaluate**
  - *Noninvasive ventilation, blood transfusion policies,*
  - *Effectiveness of new diagnostic tests*
  - *Impact of cytogenetics and molecular biology on organ dysfunction (e.g., in AML or lymphoma…)*
  - *Triage criteria by hematologists for ICU referral*
  - *Current risk factors for adverse events (invasive fungal infections, mortality)*
  - *Long term outcomes (survival, disease control, quality of life, post-ICU burden)*
  - *Decision making for patients with prolonged ICU stays*

E. Azoulay et al. Blood Reviews 2015, 359–367

La prise en charge du patient d'hématologie en Réanimation



Briser le plafond de verre

IN LOVE WE TRUST

Le réanimateur et l'hématologue !

Insuffisance Rénale Aiguë

Onco-Hématologie

- ✓ **Liée au K ou à l'hémopathie:**

  lyse tumorale, obstruction urétérale tumorale, allogreffe de MO…

  infiltration rénale (K, lymphome: fréquent mais IRA rare)

- ✓ **Liée au traitement du K ou hémopathie:**

  chimioth; chirurgie

- ✓ **Liée aux conditions: hypovolémie, sepsis, toxiques +++**

IRA survient chez 60 % des patients au cours de la maladie

IRA chez le patient d'onco-hématologie

Recouvrement de la fonction rénale

80 % des patients survivants à une IRA épurée seront sevrés de l'EER

Darmon M ICM 2007, Canet E Plos One 2013, Park MR J C Care 2011

Pronostic dépendant de la cause IRA

SLT: bon pronostic≈100% de recouvrement de la fonction rénale

E Canet 2014

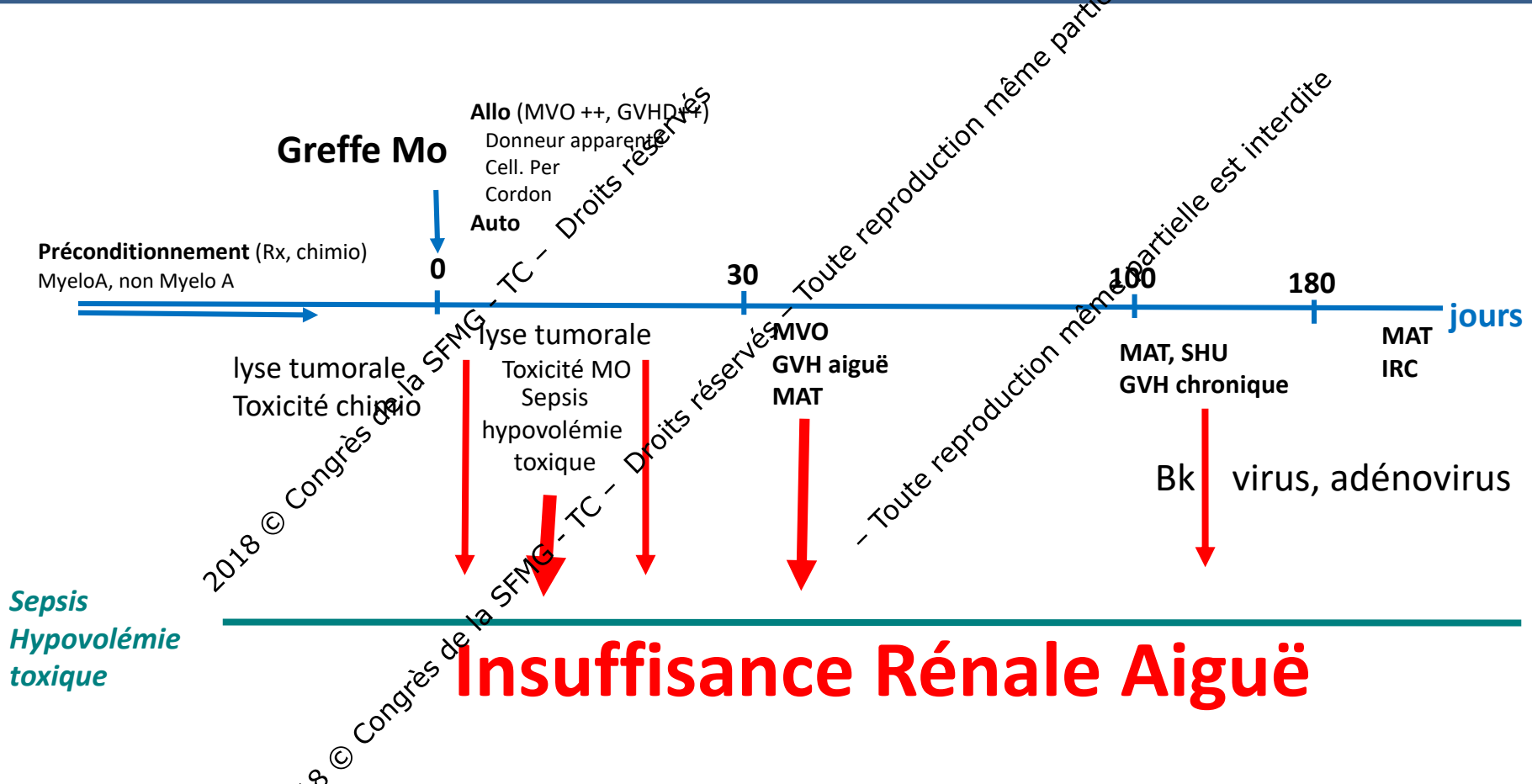
Allogreffe de MO : peu de récupération

E Canet BMT 2014

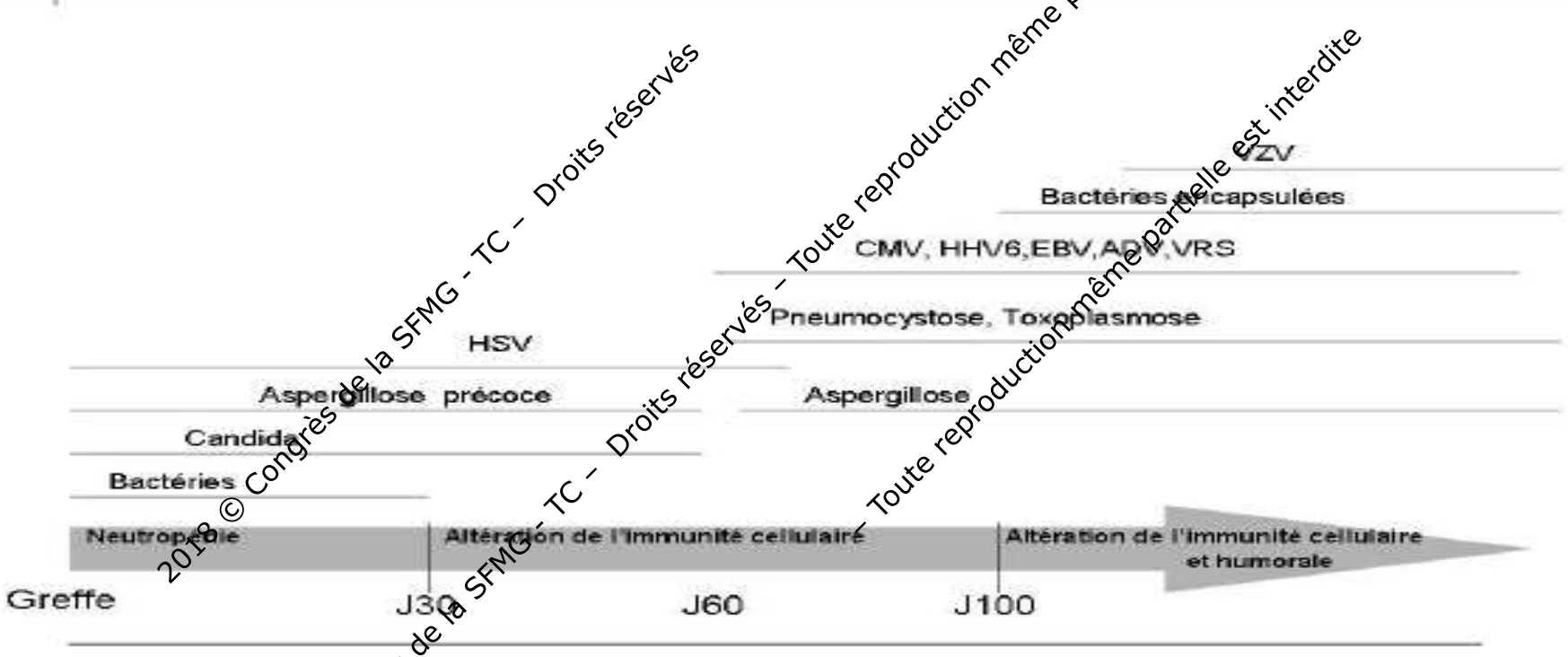
MMO: 70% de récupération avec bortezomib

Roussou M Leuk Res 2010

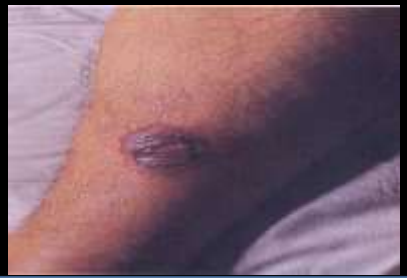
IRA post allo greffe de moelle osseuse, causes

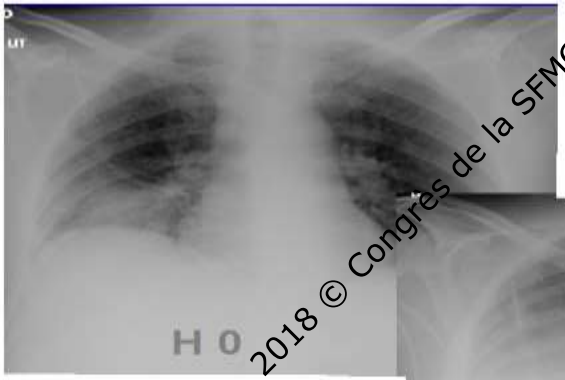


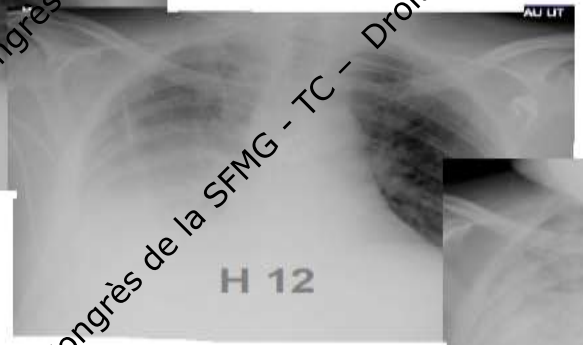
Chronologie du risque infectieux après greffe de moelle osseuse

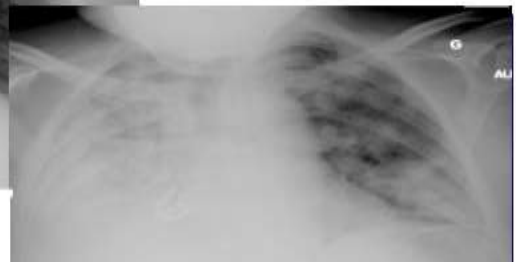


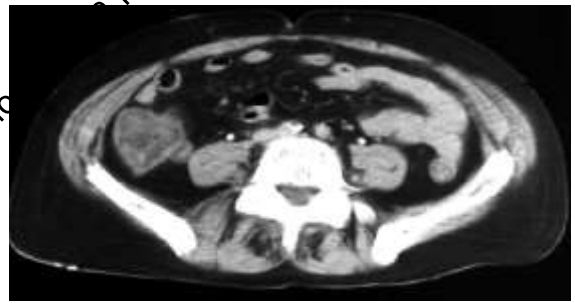
Examiner le patient et réaliser les examens complémentaires











Colite neutropénique

Greffe MO: admission en Réanimation 20%

Cohortes 90-03 et 04-11; Facteurs de pronostic: GVH et VM

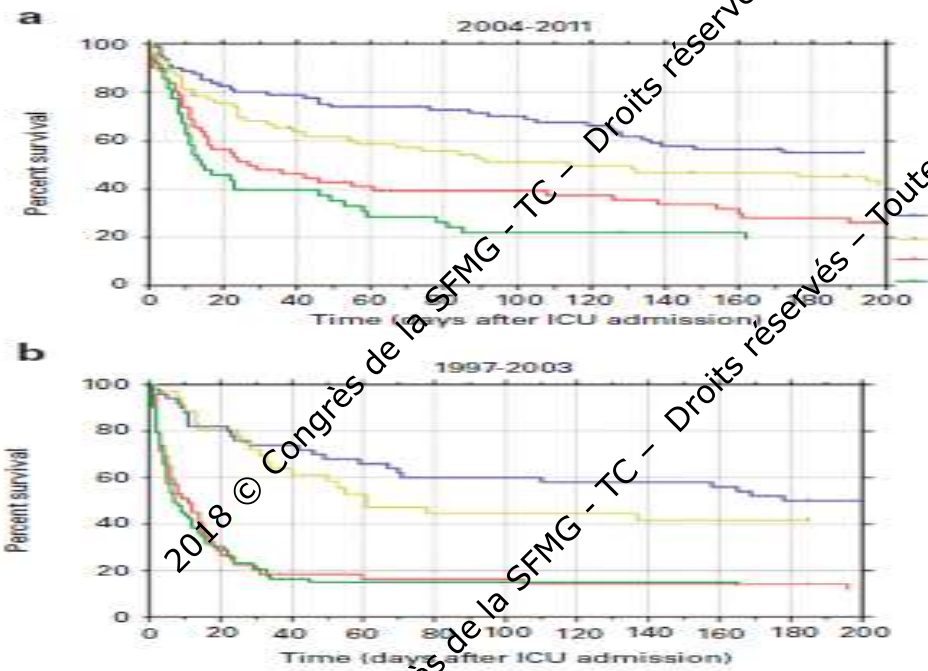


Figure 2. OS according to the presence of acute GVHD grade >2 and to the use of mechanical ventilation. aGVHD, acute GVHD; MV, invasive mechanical ventilation; ICU, intensive care unit.

ORIGINAL ARTICLE

Changes in intensive care for allogeneic hematopoietic stem cell transplant recipients

E Lengliné[1,2], S Chevret[3,4], A-S Moreau[1], F Pène[5], F Blot[6], J-H Bourhis[7], A Buzyn[8,9], B Schlemmer[1], G Socié[2,10] and E Azoulay[1,4]

Bone Marrow Transplant. 2015 Jun;50(6):840-5.

Greffe MO: admission en Réanimation 20%

Cohortes 97-03 et 04-11

	Recent cohort 2004-2011	Historical cohort 1997-2003	p
n	288	200	
HSCT Procedures	1261	1025	
Age (years)	48 [32-56]	41 [29-49]	<0,0001
Sex (male-%)	191 (67)	118 (56)	
Purpose of HSCT			<0,0001
AML	87 (30)	66 (32)	
ALL	56 (19)	40 (19)	
MDS	25 (9)	11 (5)	
CML	13 (5)	34 (16)	
Mature lymphoid malignancy	71 (29)	43 (20)	
Other	24 (10)	15 (8)	
Time from diagnosis to HSCT (months)	16 [6-49]	12 [6-27]	0,008
Status at transplantation			0,83
Complete remission / chronic phase	210 (73)	150 (72)	
Partial remission / progressive	78 (27)	58 (28)	
Conditioning regiment			< 0,0001
Reduced intensity	131 (46)	21 (10)	
Myeloablative	153 (54)	188 (89)	
TBI overall	161 (60)	136 (65)	0,3
TBI > 10 Gy	82 (28)	132 (63)	<0,0001
ATG	55 (21)	56 (27)	
Source of stem cell			< 0,0001
Peripheral blood stem cell	183 (67)	59 (28)	
Bone marrow	55 (20)	141 (67)	
Cord blood	34 (12)	9 (4)	
Donor type			<0,0001
Sibling	126 (46)	146 (70)	
Matched unrelated	99 (37)	60 (29)	
Mismatched	46 (17)	3 (1)	

Plus vieux

Indications différentes

Procédures différentes

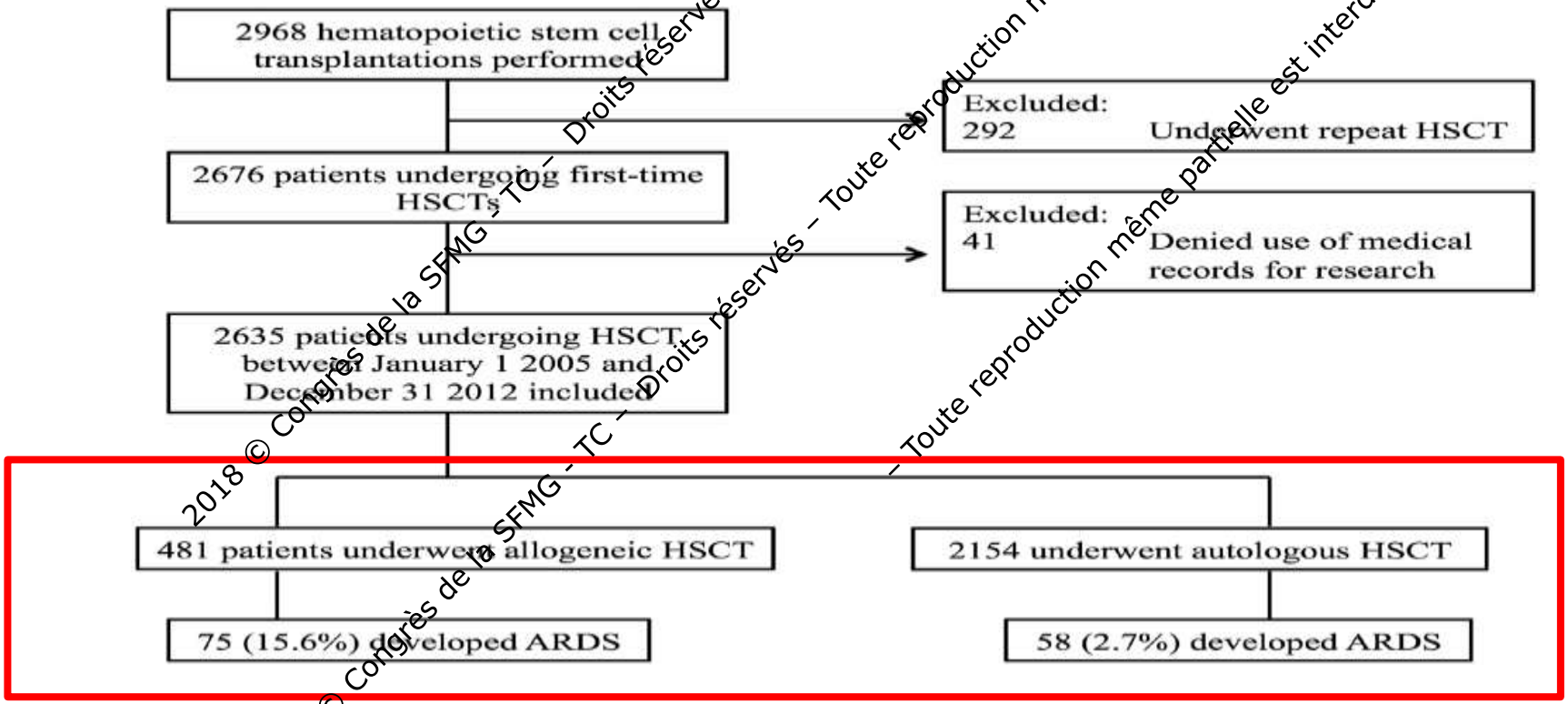
RIC > MAC

CSP > MO

Non apparenté

Epidemiology of Acute Respiratory Distress Syndrome Following Hematopoietic Stem Cell Transplantation

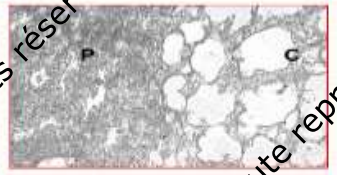
Crit Care Med 2016; 44:1082–1090

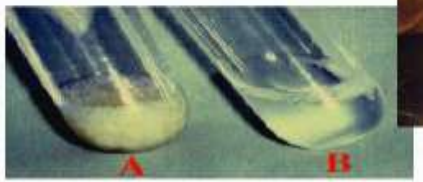


STRATEGIE DIAGNOSTIQUE

Invasive or noninvasive ?

- Invasive:
  - Biopsy
- Semi-invasive:
  - FO-BAL
- Non invasive
  - Blood cultures
  - Sputa
  - Induced sputa
  - NPA
  - Antigenes
  - Echography
  - HRCT





Who c(sh)ould benefit from BAL?

- First line
  - Drug-related pulmonary toxicity
  - PCP (first hours)
  - Patient receiving mechanical ventilation ?
- And…
  - Before pulmonary biopsy
  - New nosology
  - Non infectious diagnoses in neutropenic patients

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.

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)