"How low can we go?" om restrictive transfusionsgrænser

Jakob Stensballe

Overlæge, PhD

Lægefaglig ansvarlig for Region H's Blødningsvagt

Transfusionsmedicinsk Enhed, Rigshospitalet

Blodbanken i Region H

stensballe@rh.dk

COI: No

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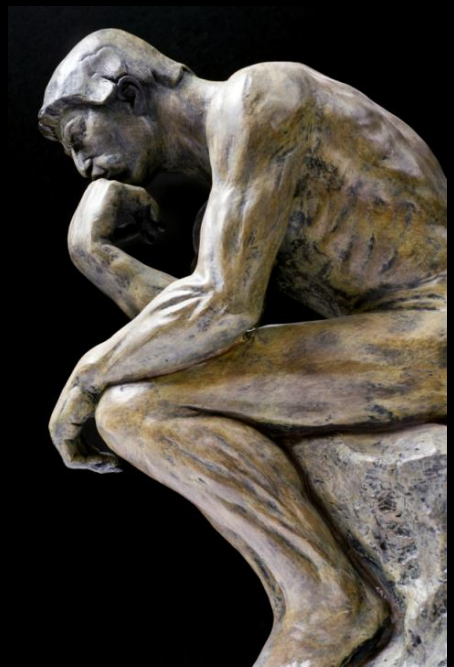
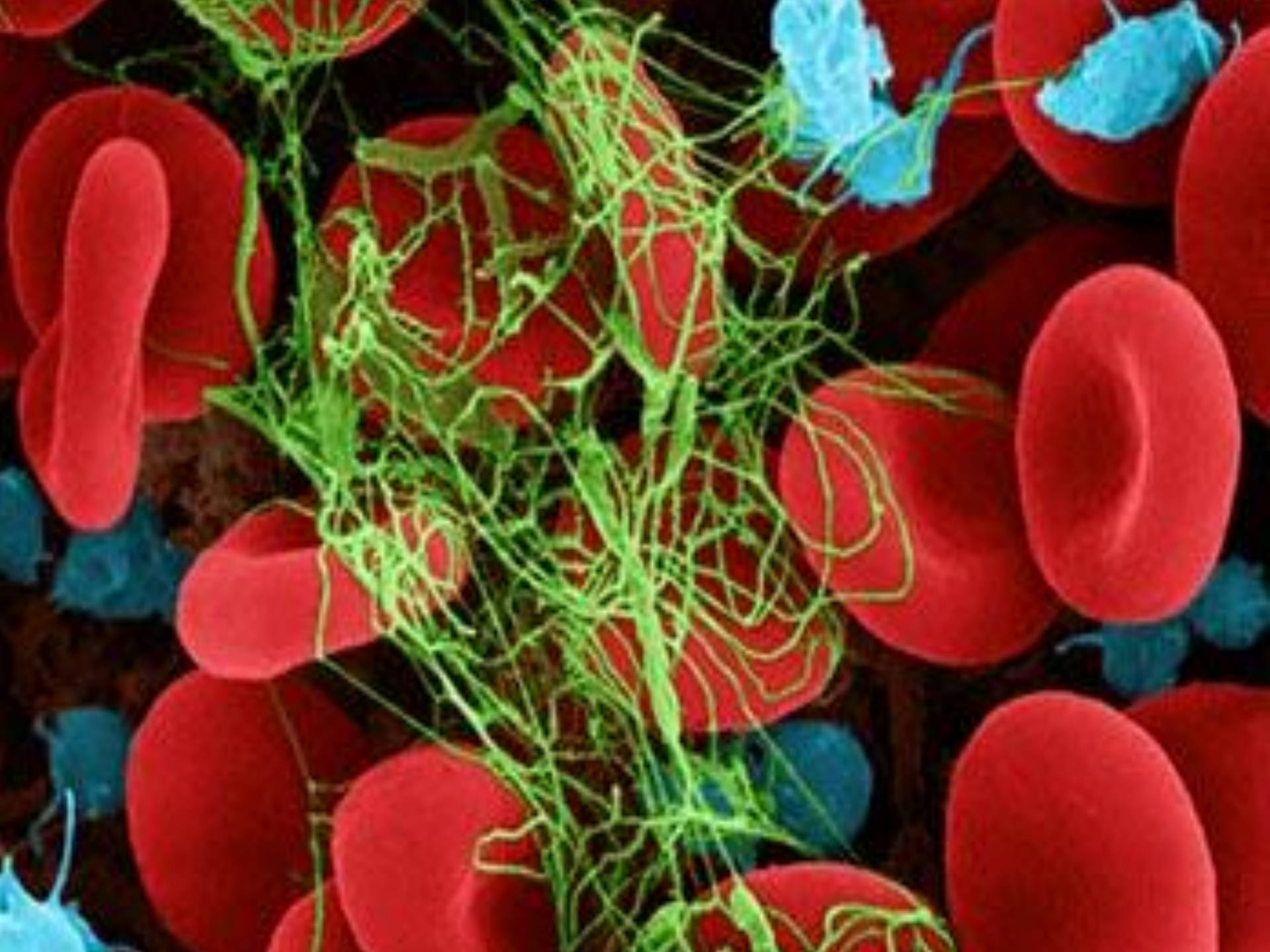
COI: No

Er der brug for SAGM her…?

1. Ja
2. Nej
3. Måske



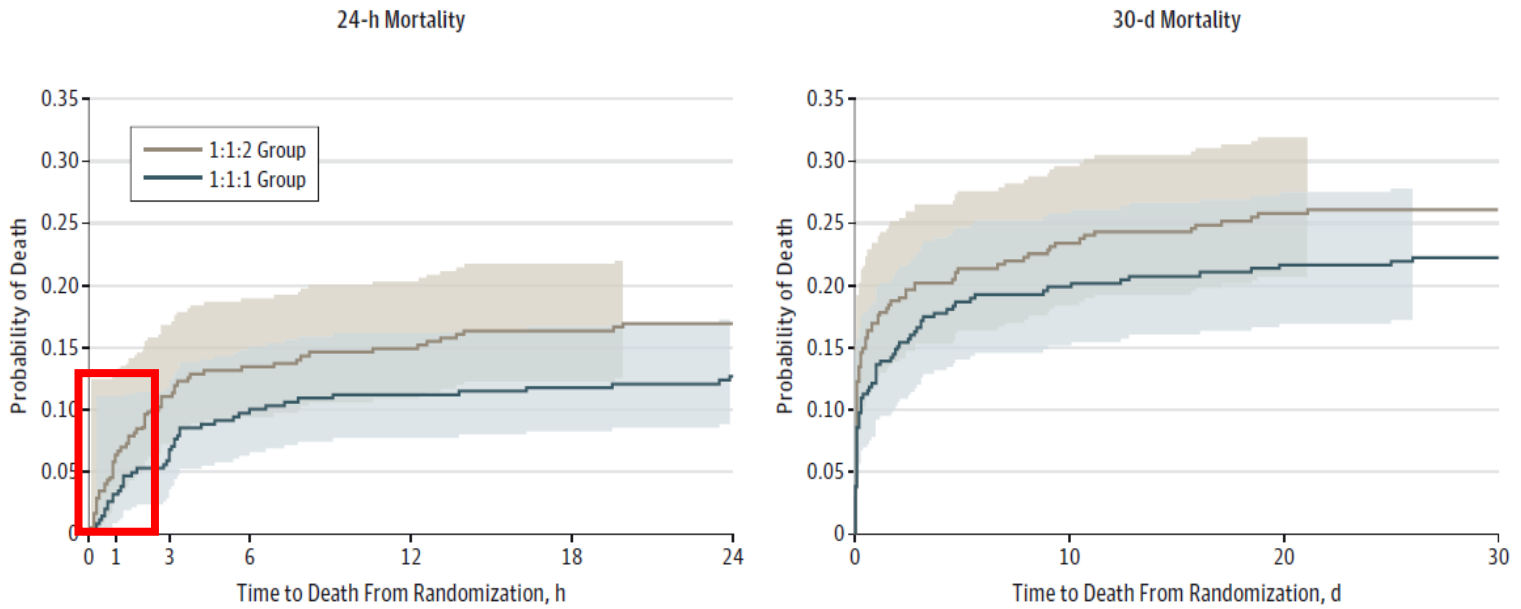


Original Investigation

Transfusion of Plasma, Platelets, and Red Blood Cells in a 1:1:1 vs a 1:1:2 Ratio and Mortality in Patients With Severe Trauma

The PROPPR Randomized Clinical Trial

Figure 2. Kaplan-Meier Failure Curves for Mortality at 24 Hours and 30 Days



No. at risk

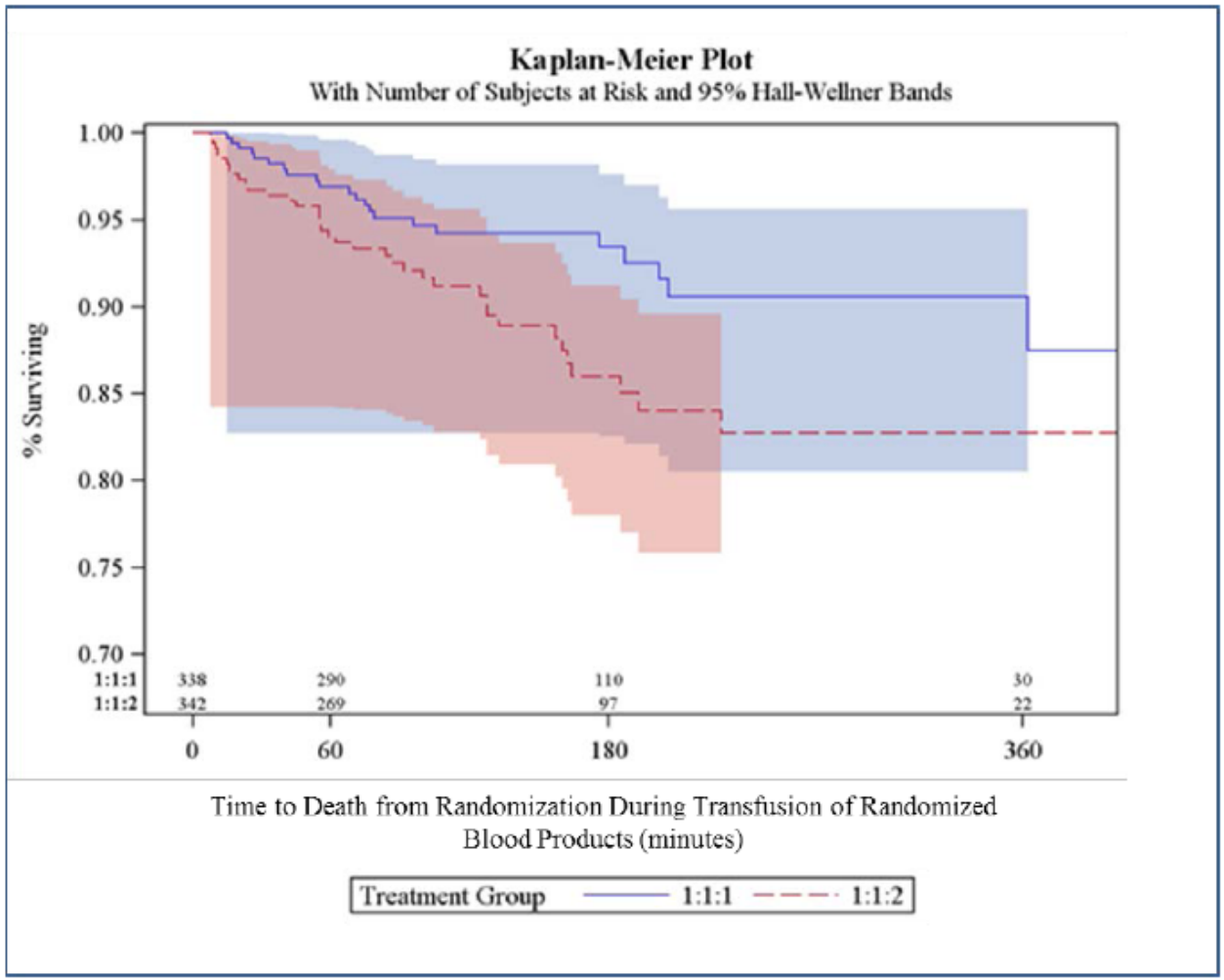
1:1:2	342	322	304	296	291	286	284	342	261	253	252
1:1:1	338	327	318	305	300	297	295	338	269	263	260

Holcomb et al. JAMA 2015

Transfusion of Plasma, Platelets, and Red Blood Cells in a 1:1:1 vs a 1:1:2 Ratio and Mortality in Patients With Severe Trauma

The PROPPR Randomized Clinical Trial

Figure 2c. Kaplan-Meier Curves during Transfusion of Randomized Blood Products




Hvilken trigger
for SAGM..?

Transfusion Strategies for Acute Upper Gastrointestinal Bleeding

N ENGL J MED 368;1 NEJM.ORG JANUARY 3, 2013

Càndid Villanueva, M.D., Alan Colomo, M.D., Alba Bosch, M.D., Mar Concepción, M.D., Virginia Hernandez-Gea, M.D., Carles Aracil, M.D., Isabel Graupera, M.D., María Poca, M.D., Cristina Alvarez-Urturi, M.D., Jordi Gordillo, M.D., Carlos Guarner-Argente, M.D., Miquel Santaló, M.D., Eduardo Muñiz, M.D., and Carlos Guarner, M.D.

4,3 versus 5,6 mmol/l

	Restrictive Strategy Group (N = 444)	Liberal Strategy Group (N = 445)	P value
Sex, M / F	314 (71%) / 130 (29%)	291 (65%) / 154 (35%)	0.98
Age (yr)	64 ± 16	66 ± 15	0.11
NSAID use	97 (22%)	98 (22%)	1.0
Anticoagulants use	47 (11%)	60 (13.5%)	0.22
In-hospital bleeding †	20 (4.5%)	30 (7%)	0.19
Previous bleeding	36 (8%)	36 (8%)	1.0
Associated diseases	294 (66%)	307 (69%)	0.39
Systolic blood pressure	101 ± 17	100 ± 20	0.53
Heart rate	98 ± 19	98 ± 18	0.89
Shock at admission ‡	122 (28%)	136 (31%)	0.33
Creatinine (µmol/L)	100 ± 61	103 ± 60	0.48
Urea (mmol/L)	14.2 ± 8	14.6 ± 9	0.99
Hours from start of bleeding to admission	13 ± 9	11 ± 8	0.33
Minutes from Admission to randomization	19 ± 7	18 ± 6	0.44
Hours from Admission to gastroscopy	5 ± 6	5 ± 7	0.78

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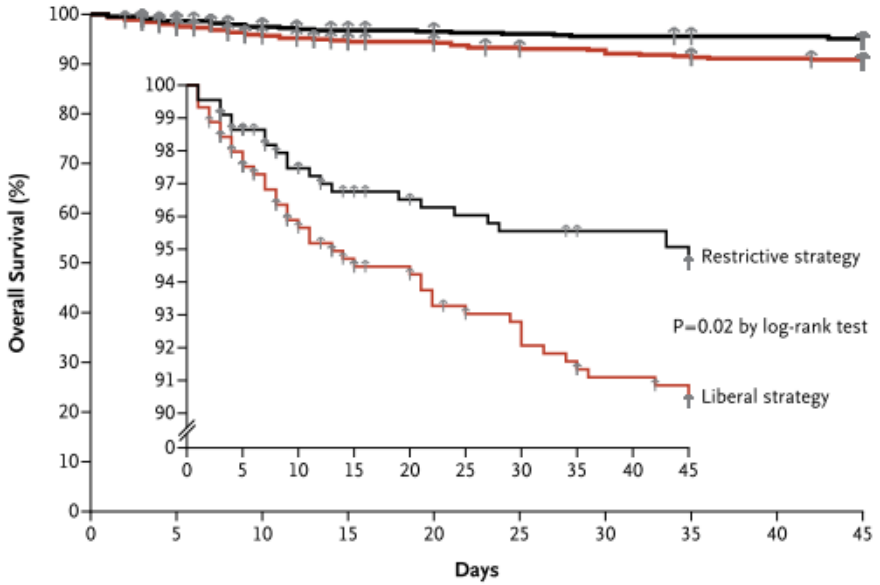
A Survival, According to Transfusion Strategy



No. at Risk

Restrictive strategy	444	429	412	404	401	399	397	395	394	392
Liberal strategy	445	428	407	397	393	386	383	378	375	372

B Death by 6 Weeks, According to Subgroup

Subgroup	Restrictive Strategy	Liberal Strategy	Hazard Ratio (95% CI)	P Value
	no. of patients/total no. (%)			
Overall	23/444 (5)	41/445 (9)	0.55 (0.33–0.92)	0.02
Patients with cirrhosis	15/139 (11)	25/138 (18)	0.57 (0.30–1.08)	0.08
Child–Pugh class A or B	5/113 (4)	13/109 (12)	0.30 (0.11–0.85)	0.02
Child–Pugh class C	10/26 (38)	12/29 (41)	1.04 (0.45–2.37)	0.91
Bleeding from varices	10/93 (11)	17/97 (18)	0.58 (0.27–1.27)	0.18
Bleeding from peptic ulcer	7/228 (3)	11/209 (5)	0.70 (0.26–1.25)	0.26

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 OCTOBER 9, 2014 VOL. 371 NO. 15

Lower versus Higher Hemoglobin Threshold for Transfusion in Septic Shock

Lars B. Holst, M.D., Nicolai Haase, M.D., Ph.D., Jørn Wetterslev, M.D., Ph.D., Jan Wernerman, M.D., Ph.D., Anne B. Guttormsen, M.D., Ph.D., Sari Karlsson, M.D., Ph.D., Pär I. Johansson, M.D., Ph.D., Anders Åneman, M.D., Ph.D., Marianne L. Vang, M.D., Robert Winding, M.D., Lars Nebrich, M.D., Helle L. Nibro, M.D., Ph.D., Bodil S. Rasmussen, M.D., Ph.D., Johnny R.M. Lauridsen, M.D., Jane S. Nielsen, M.D., Anders Oldner, M.D., Ph.D., Ville Pettilä, M.D., Ph.D., Maria B. Cronhjort, M.D., Lasse H. Andersen, M.D., Ulf G. Pedersen M.D., Nanna Reiter, M.D., Jørgen Wiis, M.D., Jonathan O. White, M.D., Lene Russell, M.D., Klaus J. Thornberg, M.D., Peter B. Hjortrup, M.D., Rasmus G. Müller, M.D., Morten H. Møller, M.D., Ph.D., Morten Steensen, M.D., Inga Tjäder, M.D., Ph.D., Kristina Kilsand, R.N., Suzanne Odeberg-Wernerman, M.D., Ph.D., Brit Sjøbø, R.N., Helle Bundgaard, M.D., Ph.D., Maria A. Thyø, M.D., David Lodahl, M.D., Rikke Mærkedahl, M.D., Carsten Albeck, M.D., Dorte Illum, M.D., Mary Kruse, M.D., Per Winkel, M.D., D.M.Sci., and Anders Perner, M.D., Ph.D., for the TRISS Trial Group* and the Scandinavian Critical Care Trials Group

4,3 versus 5,6 mmol/l

The NEW ENGLAND JOURNAL of MEDICINE

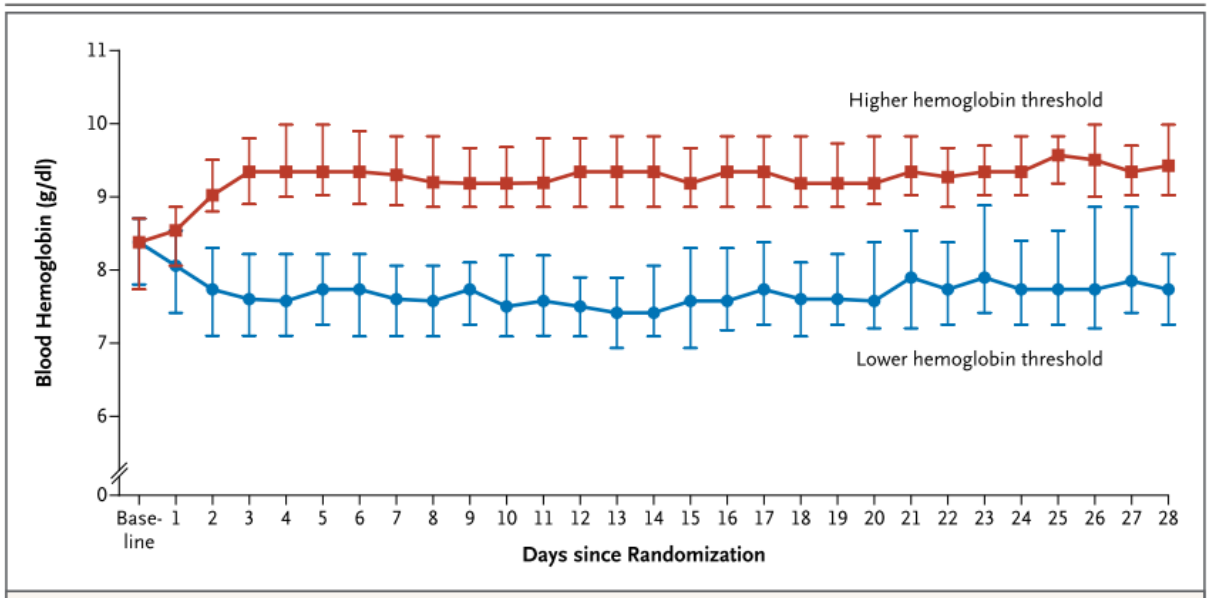
ESTABLISHED IN 1812 OCTOBER 9, 2014 VOL. 371 NO. 15

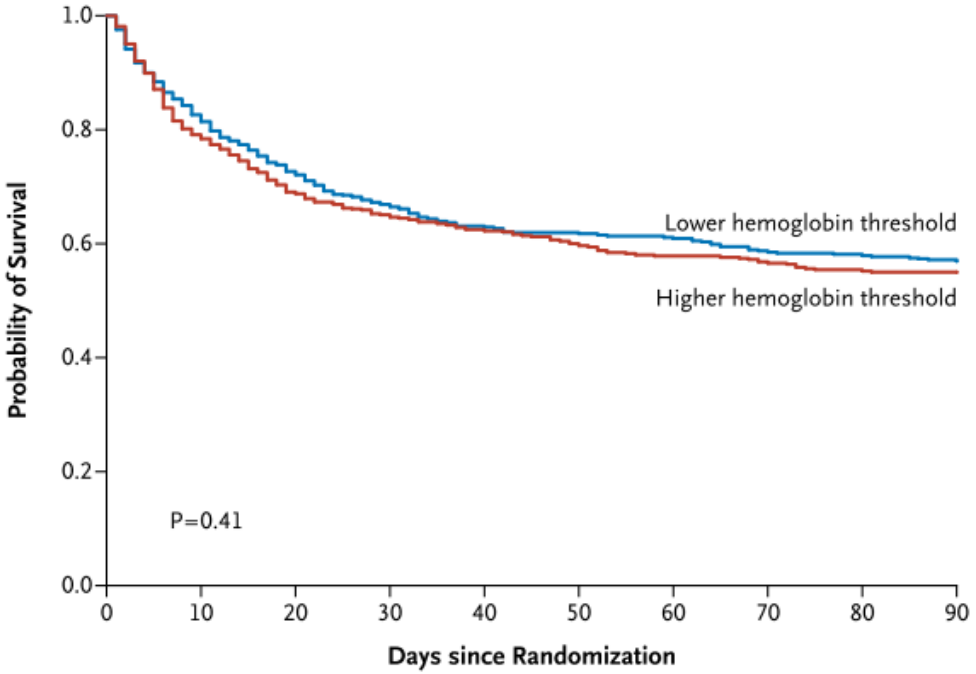
Lower versus Higher Hemoglobin Threshold for Transfusion in Septic Shock

Alder 67 år

Septisk shock (behov for NA)

90-d dødelig 45 %


Blood Hemoglobin (g/dl)
11
10
9
8
7
6
0
Higher hemoglobin threshold
Lower hemoglobin threshold
Base-line
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Days since Randomization


Probability of Survival
1.0
0.8
0.6
0.4
0.2
0.0
Lower hemoglobin threshold
Higher hemoglobin threshold
P=0.41
0 10 20 30 40 50 60 70 80 90
Days since Randomization

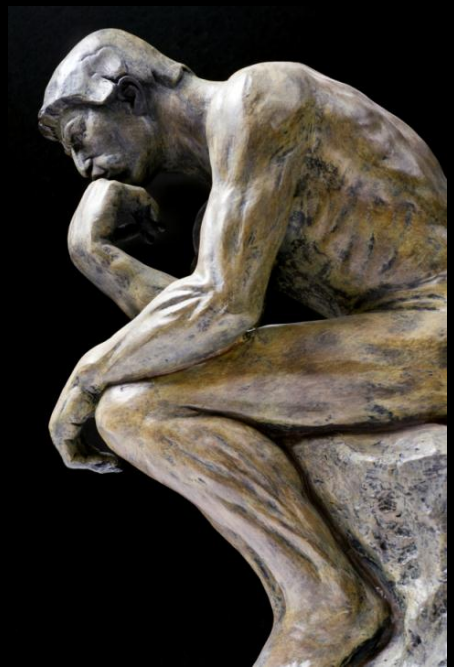

4.3 mmol/L


AP
VE

SAGM trigger her…?

Hb mmol/l

- 7
- 6
- 5
- 4,3



The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 DECEMBER 29, 2011 VOL. 365 NO. 26

Liberal or Restrictive Transfusion in High-Risk Patients after Hip Surgery

Jeffrey L. Carson, M.D., Michael L. Terrin, M.D., M.P.H., Helaine Noveck, M.P.H., David W. Sanders, M.D., Bernard R. Chaitman, M.D., George G. Rhoads, M.D., M.P.H., George Nemo, Ph.D., Karen Dragert, R.N., Lauren Beaupre, P.T., Ph.D., Kevin Hildebrand, M.D., William Macaulay, M.D., Courtland Lewis, M.D., Donald Richard Cook, B.M.Sc., M.D., Gwendolyn Dobbin, C.C.R.P., Khwaja J. Zakriya, M.D., Fred S. Apple, Ph.D., Rebecca A. Horney, B.A., and Jay Magaziner, Ph.D., M.S.Hyg., for the FOCUS Investigators*

2016 patienter med alder 82 år (60-d dødelig 8 %)

Kardiovaskulære co-morbiditer

Plejehjem 13% - aflastning 40%

5 versus 6 mmol/l

Liberal or Restrictive Transfusion in High-Risk Patients after Hip Surgery

Jeffrey L. Carson, M.D., Michael L. Terrin, M.D., M.P.H., Helaine Noveck, M.P.H.,

N Engl J Med 2011.

Table 3. Outcomes at 30 Days and 60 Days.*

Variable	30-Day Period				60-Day Period			
	Liberal Strategy (N=1007)	Restrictive Strategy (N=1009)	Odds Ratio (99% CI)	Absolute Risk Difference (99% CI)	Liberal Strategy (N=1007)	Restrictive Strategy (N=1009)	Odds Ratio (95% CI)	Absolute Risk Difference (95% CI)
	no./total no. (%)			*percentage points*	*no./total no. (%)*			*percentage points*
Death or inability to walk independently	459/995 (46.1)	481/1000 (48.1)	0.92 (0.73 to 1.16)	−2.0 (−7.7 to 3.8)	351/998 (35.2)	347/1001 (34.7)	1.01 (0.84 to 1.22)	0.5 (−3.7 to 4.7)
Inability to walk independently	407/995 (40.9)	438/1000 (43.8)			275/998 (27.6)	281/1001 (28.1)		
Death	52/995 (5.2)	43/1000 (4.3)	1.23 (0.71 to 2.12)	0.9 (−1.5 to 3.4)	76/998 (7.6)	66/1001 (6.6)	1.17 (0.75 to 1.83)†	1.0 (−1.9 to 4.0)†
			P Value				P Value	
Residence			0.17				0.34	
Home or retirement home	457/994 (46.0)	425/999 (42.5)			617/996 (61.9)	603/1001 (60.2)		
Nursing home	135/994 (13.6)	161/999 (16.1)			137/996 (13.8)	161/1001 (16.1)		
Other	402/994 (40.4)	413/999 (41.3)			242/996 (24.3)	237/1001 (23.7)		
	score				*score*			
Function and symptom scales								
Lower-extremity physical ADL‡	7.3±4.0	7.4±3.9	0.72		5.1±4.2	5.1±4.3	0.85	
Instrumental ADL§	3.9±0.5	3.9±0.4	0.10		3.7±0.8	3.7±0.9	0.94	
FACIT-Fatigue scale¶	38.7±7.7	38.6±7.6	0.84		41.8±7.3	42.3±7.4	0.26	

Acta Orthopaedica 2015; 86 (3): x–x

Postoperative blood transfusion strategy in frail, anemic elderly patients with hip fracture

The TRIFE randomized controlled trial

Merete GREGERSEN[1], Lars C BORRIS[2], and Else Marie DAMSGAARD[1]

Eur J Orthop Surg Traumatol (2015) 25:1031–1038
DOI 10.1007/s00590-015-1609-2

ORIGINAL ARTICLE • HIP - FRACTURES

Blood transfusion and risk of infection in frail elderly after hip fracture surgery: the TRIFE randomized controlled trial

Merete Gregersen · Else Marie Damsgaard · Lars Carl Borris

284 patienter med alder 86 år

Plejehjem - aflastning – alle

Ingen co-morbiditeter 25%

6 versus 7 mmol/l

Acta Orthopaedica 2015; 86 (3): x–x

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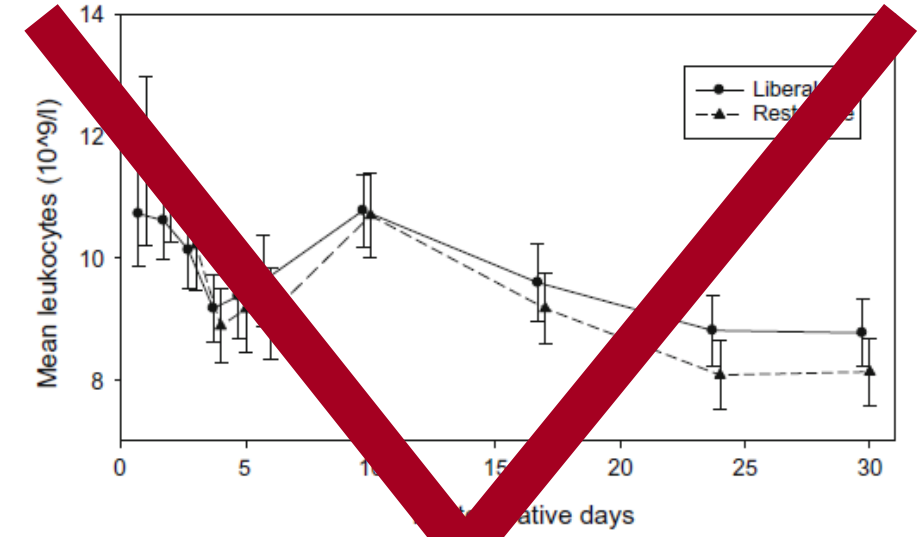

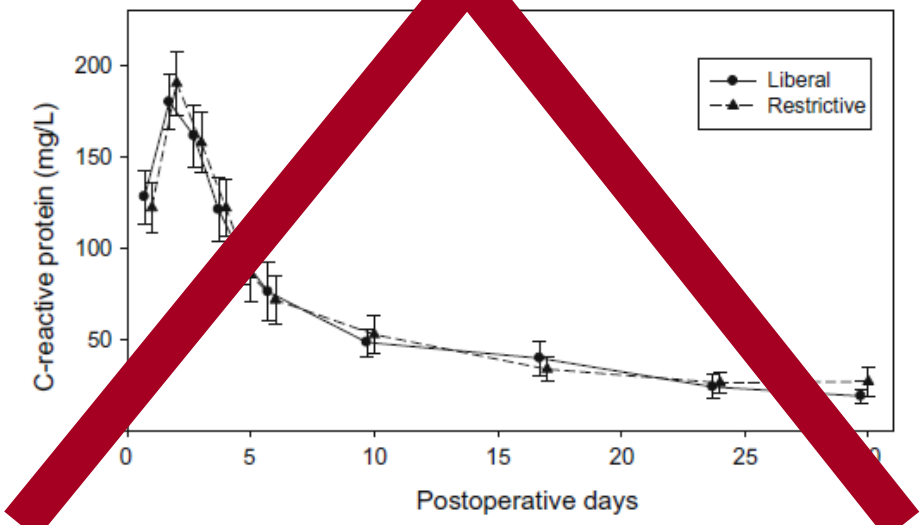

Acta Orthopaedica 2015; 86 (3): x–x

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Table 2 (Intention-to-treat) distribution of postoperative infections after restrictive or liberal RBC transfusion thresholds within 10 days af… …cture surgery and presented as relative risk ratios with 95 % confidence intervals (CI)

10-day o… …s	Nursing home residents			Sheltered housing residents		
	Restrictive …89)	Liberal ($n = 90$)	Risk ratio (95 % CI)	Restrictive ($n = 55$)	Liberal (n	Risk ratio (95 % CI)
Total infections (%)						
No	25 (28)	…(38)	1.00 (reference)	15 (2…	13 (26)	1.00 (reference)
Yes	64 (72)	56 (	1.15 (0.94–1.42)	…73)	37 (74)	0.98 (0.78–1.23)
Pneumonia (%)						
No	71 (80)	72 (80)	1… …f… …)	43 (78)	40 (80)	1.00 (reference)
Yes	18 (20)	18 (20)	1… …1)	12 (22)	10 (20)	1.09 (0.51–2.30)
UTI[a] (%)						
No	43 (48)	53 (5…	1.00 (reference)	…45)	25 (50)	1.00 (reference)
Yes	46 (52)	…41)	1.25 (0.91–1.72)	30 (…	25 (50)	1.09 (0.76–1.57)
Other infections						
No	87 (	87 (97)	1.00 (reference)	55 (100)	…00)	1.00 (reference)
Yes	…(2)	3 (3)	0.67 (0.11–3.93)	0	0	–

[a] Urinary T… …ection

Acta Orthopaedica 2015; 86 (3): x–x

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Physical ability 10 days after surgery	All residents (n = 284) Restrictive strategy (n = 144)	Liberal strategy (n = 140)	p-value	Nursing homes (n = 179) Restrictive strategy (n = 89)	Liberal strategy (n = 90)	p-value	Sheltered h (n Restrictive strategy (n = 55)	Liberal strategy (n = 50)	p-value
Modified Barthel index [a] (%)			0.6			0.4			1.0
Independent or moderately dependent	38 (26)	(23)		18 (20)	(17)		20 (36)	17 (34)	
Substantially dependent	51 (35)	58 (		24 (	33 (37)		27 (49)	25 (50)	
Completely dependent	55 (38)	50 (36)		(53)	42 (46)		8 (15)	8 (16)	
New Mobility score [b]									
median (IQR)	1 (0–1)	1 (0–1)		1 (0–1)	1 (0–1)	0.8	1 (1–2)	1 (1–2)	0.5
Cumulated ambulation score [c] (%)			.3			0.2			0.2
Walking ability	19 (13)	16 (		4 (	8 (9)		16 (29)	7 (14)	
Sit-to-stand-to-sit	65 (45)		3)	37 (42)	(44)		30 (55)	34 (68)	
Bedridden	56 (39	50 (36)		48 (54)	42 (		9 (16)	9 (18)	
Transfer from bed to chair (%)			0.3			1.0			0.2
Independent	(17)	19 (14)		10 (11)	11 (12)		15 (27)	8 (16)	
Dependent	119 (83)	121 (86)		79 (89)	79 (88)		40 (73)	42 (84)	
Walking ability (%)			0.9			0.7			0.7
Independent	1 (1)	1 (1)		1 (1)	1 (1)		0	0 (0)	
Walking aids	25 (17)	25 (18)		7 (8)	12 (13)		18 (33)	(26)	
Person	59 (41)	66 (47)		33 (37)	38 (42)		26 (47)		
No	59 (41)	48 (34)		48 (54)	39 (43)		11 (20)	9 (	

Acta Orthopaedica 2015; 86 (3): x–x

Postoperative blood transfusion strategy in frail, anemic elderly patients with hip fracture

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Table 3. Hazards ratio of time to death within 30 and 90 days by intention-to-treat analysis and per-protocol analysis

	30-day mortality				90-day mortality			
	Restrictive strategy	Liberal strategy	Hazard ratio (95% CI)	p-value	Restrictive strategy	Liberal strategy	Hazard ratio (95% CI)	p-value
Intention to treat, n	144	140			144	140		
All residents (%)	21 (14)	12 (8)	1.8 (0.7–3.6)	0.1	40 (27)	30 (21)	1.4 (0.9–2.2)	0.2
Nursing homes (%)	16 (18)	9 (10)	1.9 (0.8–4.3)	0.1	32 (36)	18 (20)	2.0 (1.1–3.6)	0.01
Sheltered housing (%)	5 (9)	3 (6)	1.5 (0.4–6.4)	0.6	8 (15)	12 (24)	0.6 (0.2–1.5)	0.3
Per-protocol, n	132	128			132	128		
All residents (%)	21 (16)	9 (7)	2.4 (1.1–5.2)	0.03	35 (27)	26 (20)	1.4 (0.8–2.3)	0.2
Nursing homes (%)	16 (20)	8 (10)	2.2 (0.9–5.0)	0.07	28 (35)	17 (20)	1.9 (1.0–3.4)	0.04
Sheltered housing (%)	5 (10)	1 (2)	4.6 (0.5–39)	0.2	7 (13)	9 (19)	0.7 (0.3–2.0)	0.5

Acta Orthopaedica 2015; 86 (3): x–x

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Conclusions A more liberal RBC transfusion strategy was not associated with higher risk of infection among residents from nursing homes or sheltered housing undergoing hip fracture surgery.

Interpretation — According to our Hb thresholds, recovery from physical disabilities in frail elderly hip fracture patients was similar after a restrictive RBC transfusion strategy and after a liberal strategy. Implementation of a liberal RBC transfusion strategy in nursing home residents has the potential to increase survival.

Acta Orthopaedica 2015; 86 (3): x–x

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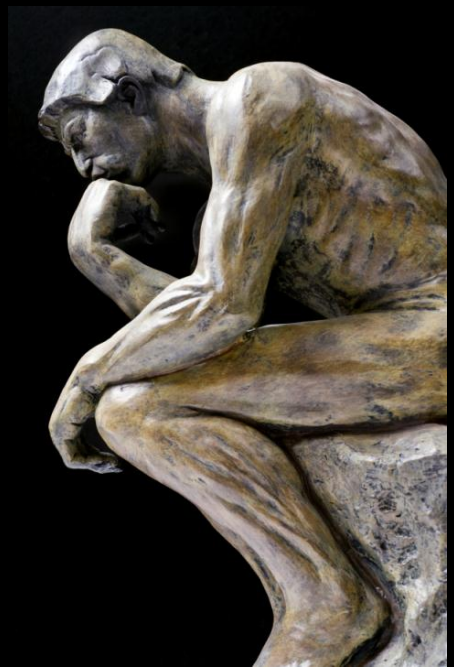
- **Styrke utilstrækkelig til at bedømme mortalitet (under-powered)**
- **Overraskende stor interventionseffekt**
- **Tilfældighed kan være årsag til forskel**
- **Meget selekteret gruppe**


5 mmol/L

SAGM trigger her…?

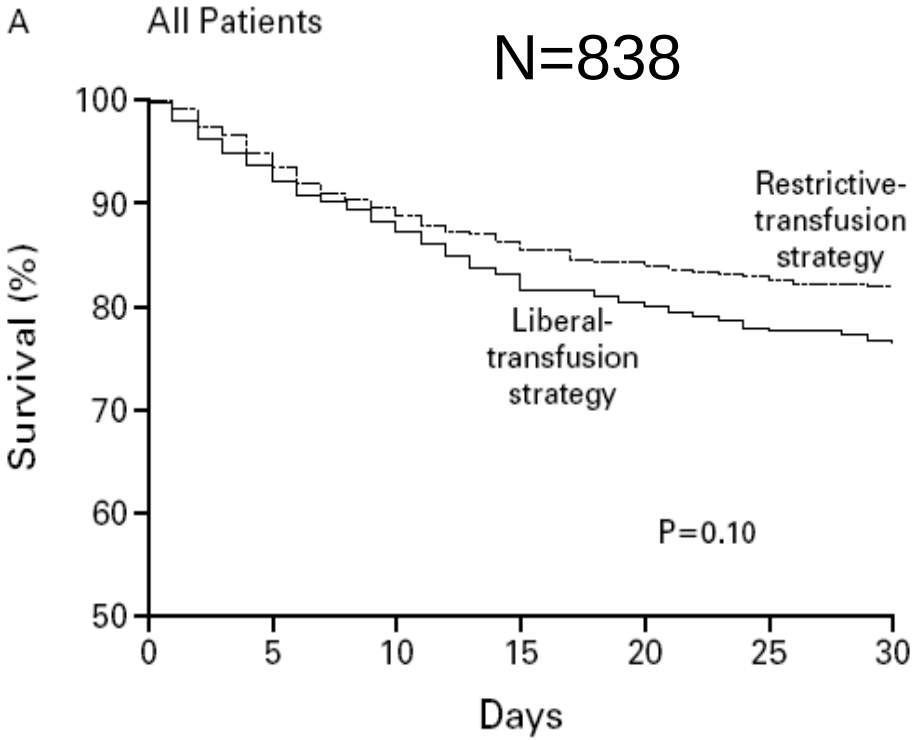
Hb mmol/l

- 6
- 5
- 4,3



A MULTICENTER, RANDOMIZED, CONTROLLED CLINICAL TRIAL OF TRANSFUSION REQUIREMENTS IN CRITICAL CARE

PAUL C. HÉBERT, M.D., GEORGE WELLS, PH.D., MORRIS A. BLAJCHMAN, M.D., JOHN MARSHALL, M.D., CLAUDIO MARTIN, M.D., GIUSEPPE PAGLIARELLO, M.D., MARTIN TWEEDDALE, M.D., PH.D., IRWIN SCHWEITZER, M.SC., ELIZABETH YETISIR, M.SC., AND THE TRANSFUSION REQUIREMENTS IN CRITICAL CARE INVESTIGATORS FOR THE CANADIAN CRITICAL CARE TRIALS GROUP*



4,3 versus 5,6 mmol/l i

Hebert et al. NEJM 1999

Transfusion Strategies for Patients in Pediatric Intensive Care Units

Jacques Lacroix, M.D., Paul C. Hébert, M.D., James S. Hutchison, M.D., Heather A. Hume, M.D., Marisa Tucci, M.D., Thierry Ducruet, M.Sc., France Gauvin, M.D., Jean-Paul Collet, M.D., Ph.D., Baruch J. Toledano, M.D., Pierre Robillard, M.D., Ari Joffe, M.D., Dominique Biarent, M.D., Kathleen Meert, M.D., and Mark J. Peters, M.D., for the TRIPICU Investigators,* the Canadian Critical Care Trials Group, and the Pediatric Acute Lung Injury and Sepsis Investigators Network

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- 637 kritisk syge børn (125 efter stor hjertekirurgi)

Table 3. (Continued.)

Variable	Restrictive-Strategy Group	Liberal-Strategy Group	Absolute Risk Reduction, Odds Ratio, or Difference in Means (95% CI)	P Value
Clinical outcomes — no./total no. (%) †				
Death				
In ICU	11/320 (3)	8/317 (3)	−0.9 (−3.6 to 1.7)	0.50
From any cause during 28-day study	14/320 (4)	14/317 (4)	0 (−3.2 to 3.2)	0.98
Nosocomial infections	65/320 (20)	79/317 (25)	4.6 (−1.9 to 11.1)	0.16
At least 1 adverse event	97/320 (30)	90/317 (28)	−1.92 (−9.0 to 5.2)	0.59
Reactions to red-cell transfusion	3/320 (1)	6/317 (2)	1.0 (−0.9 to 2.8)	0.34
Duration of care — days				
Mechanical ventilation	6.2±5.9	6.0±5.4	−0.14 (−1.1 to 0.8)	0.76
ICU stay after randomization	9.5±7.9	9.9±7.4	0.46 (−0.7 to 1.7)	0.39

4,3 versus 5,6 mmol/l

Transfusion Requirements in Surgical Oncology Patients

A Prospective, Randomized Controlled Trial

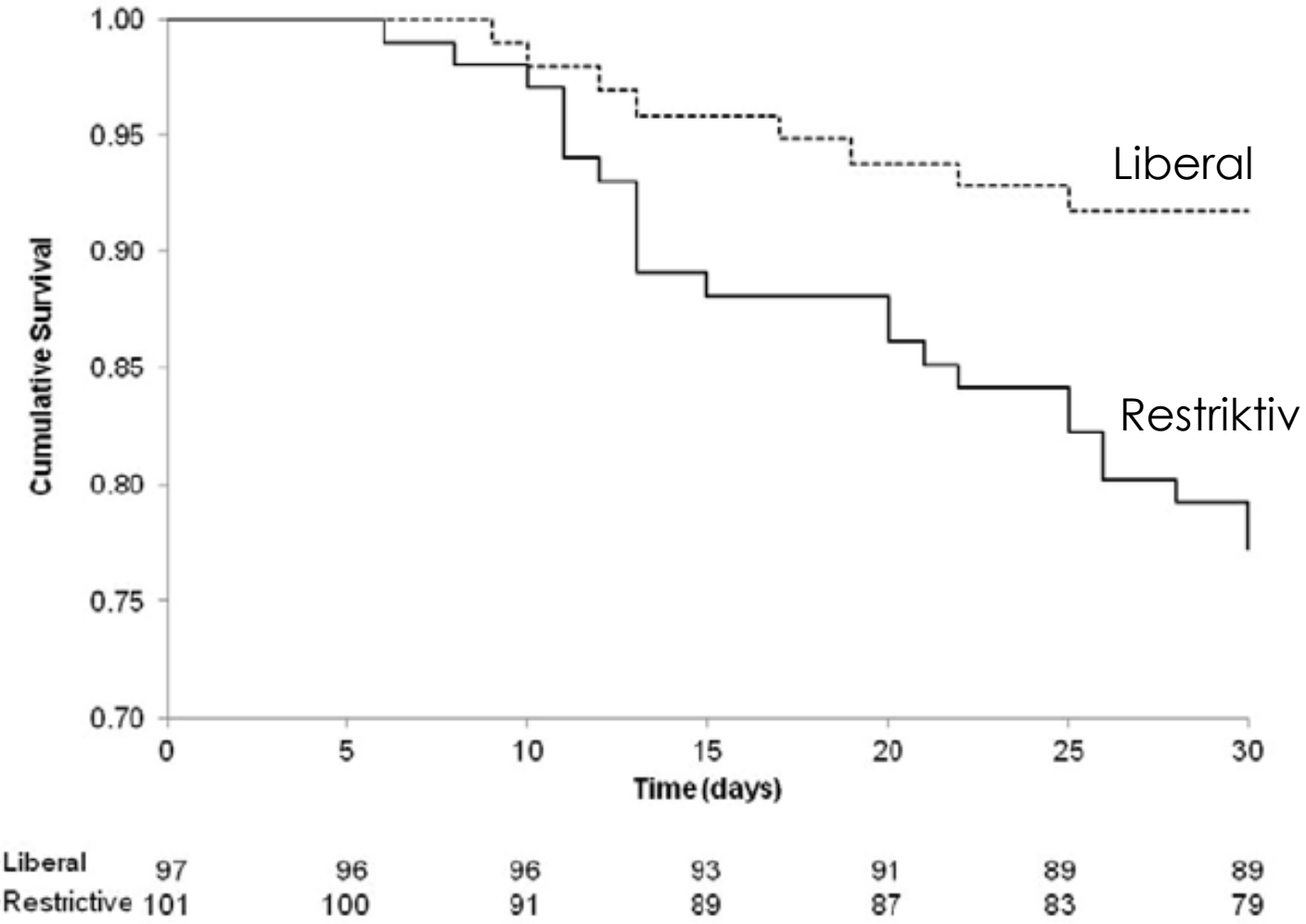
Juliano Pinheiro de Almeida, M.D., Jean-Louis Vincent, M.D., Ph.D.,
Filomena Regina Barbosa Gomes Galas, M.D., Ph.D., Elisangela Pinto Marinho de Almeida, M.D.,
Julia T. Fukushima, M.Sc., Eduardo A. Osawa, M.D., Fabricio Bergamin, M.D., Clarice Lee Park, M.D.,
Rosana Ely Nakamura, M.D., Silvia M. R. Fonseca, M.D., Guilherme Cutait, M.D.,
Joseane Inacio Alves, R.N., Mellik Bazan, P.T., Silvia Vieira, R.N., Ana C. Vieira Sandrini, L.D.N.,
Henrique Palomba, M.D., Ph.D., Ulysses Ribeiro, Jr., M.D., Ph.D., Alexandre Crippa, M.D.,
Marcos Dalloglio, M.D., Ph.D., Maria del Pilar Estevez Diz, M.D., Ph.D., Roberto Kalil Filho, M.D., Ph.D.,
Jose Otavio Costa Auler, Jr., M.D., Ph.D., Andrew Rhodes, M.B., B.S.,
Ludhmila Abrahao Hajjar, M.D., Ph.D.

- 198 patienter med behov for intensiv terapi efter abdominal cancer kirurgi
- Samlet effektmål
  - 30-d dødelighed & komplikationer
    (kardiovaskullære, ARDS, nyresvigt, dialyse, septisk shock, behov for re-operation)

4,3 versus 5,6 mmol/l

Transfusion Requirements in Surgical Oncology Patients

A Prospective, Randomized Controlled Trial



36 (35,6%) versus 19 (19,6%) patienter døde

Transfusion Requirements in Surgical Oncology Patients

A Prospective, Randomized Controlled Trial

- Power utilstrækkelig til at bedømme mortalitet (under-powered)
- Overraskende stor interventionseffekt
- Meget selekteret gruppe
- Dødelighed øget især pga adominale infektioner
- Randomiseringsprocedure utilstrækkeligt beskrevet

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Liberal or Restrictive Transfusion after Cardiac Surgery

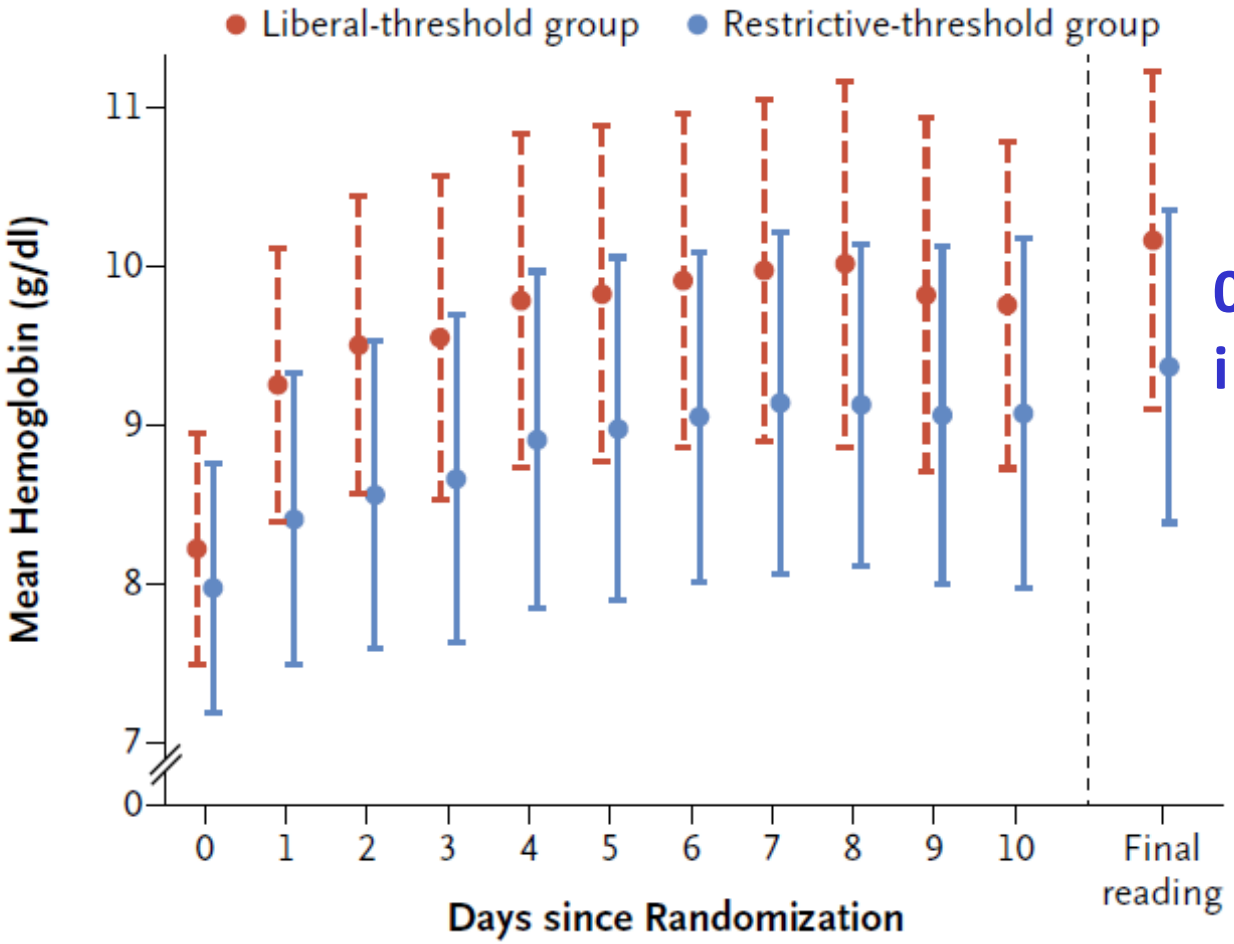
Gavin J. Murphy, F.R.C.S., Katie Pike, M.Sc., Chris A. Rogers, Ph.D., Sarah Wordsworth, Ph.D., Elizabeth A. Stokes, M.Sc., Gianni D. Angelini, F.R.C.S., and Barnaby C. Reeves, D.Phil., for the TITRe2 Investigators*

- 2003 patienter efter hjertekirurgi

4,6 versus 5,6 mmol/l

Liberal or Restrictive Transfusion after Cardiac Surgery

Gavin J. Murphy, F.R.C.S., Katie Pike, M.Sc., Chris A. Rogers, Ph.D., Sarah Wordsworth, Ph.D., Elizabeth A. Stokes, M.Sc., Gianni D. Angelini, F.R.C.S., and Barnaby C. Reeves, D.Phil., for the TITRe2 Investigators*



0,62 mmol/l i forskel

Table 3. Outcomes.

Outcome	Restrictive Transfusion Threshold (N=1000)	Liberal Transfusion Threshold (N=1003)	Estimated Treatment Effect	
			Odds Ratio or Hazard Ratio (95% CI)	P Value
Serious infection or ischemic event: primary outcome				
Overall	331/944 (35.1)	317/962 (33.0)	1.11 (0.91–1.34)*	0.30
Infectious event†	238/936 (25.4)	240/954 (25.2)	1.02 (0.83–1.26)*	0.83
Sepsis	210/982 (21.4)	214/983 (21.8)		
Wound infection	55/921 (6.0)	46/936 (4.9)		
Ischemic event	156/991 (15.7)	139/99 (114.0)	1.16 (0.90–1.49)*	0.26
Permanent stroke	15/989 (1.5)	17/985 (1.7)		
Myocardial infarction	3/987 (0.3)	4/981 (0.4)		
Gut infarction	6/987 (0.6)	1/982 (0.1)		
Acute kidney injury	140/989 (14.2)	122/989 (12.3)		
Stage 1	49/989 (5.0)	40/989 (4.0)		
Stage 2	39/989 (3.9)	35/989 (3.5)		
Stage 3	50/989 (5.1)	46/989 (4.7)		
Secondary outcomes				
No. of hours in ICU or high-dependency unit‡				
Median	49.5	45.9	0.97 (0.89–1.06)§	0.53
Interquartile range	21.9–99.7	20.1–94.8		
No. of days in hospital¶				
Median	7.0	7.0	1.00 (0.92–1.10)§	0.94
Interquartile range	5.0–10.0	5.0–10.0		
All-cause mortality at 90 days	42/1000 (4.2)	26/1003 (2.6)	1.64 (1.00–2.67)§	0.045
Clinically significant pulmonary complications	127/979 (13.0)	116/982 (11.8)	1.11 (0.85–1.45)*	0.45
All-cause mortality at 30 days	26/1000 (2.6)	19/1003 (1.9)		

Liberal or Restrictive Transfusion after Cardiac Surgery

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- Power utilstrækkelig til at bedømme mortalitet (under-powered)
- Overraskende stor interventionseffekt
- Ingen god forklaring på denne mortalitetseffekt i studiet
- Mange protokol afvigelser


4.3 eller
5 mmol/L

Restrictive versus liberal transfusion strategy for red blood cell transfusion: systematic review of randomised trials with meta-analysis and trial sequential analysis

Lars B Holst,[1] Marie W Petersen,[1] Nicolai Haase,[1] Anders Perner,[1] Jørn Wetterslev[2]

the**bmj** | *BMJ* 2015;350:h1354 | doi: 10.1136/bmj.h1354

Sundhedsstyrelsen
Danish Health and Medicines Authority

JANUAR 2015

VEJLEDNING OM BLODTRANSFUSION

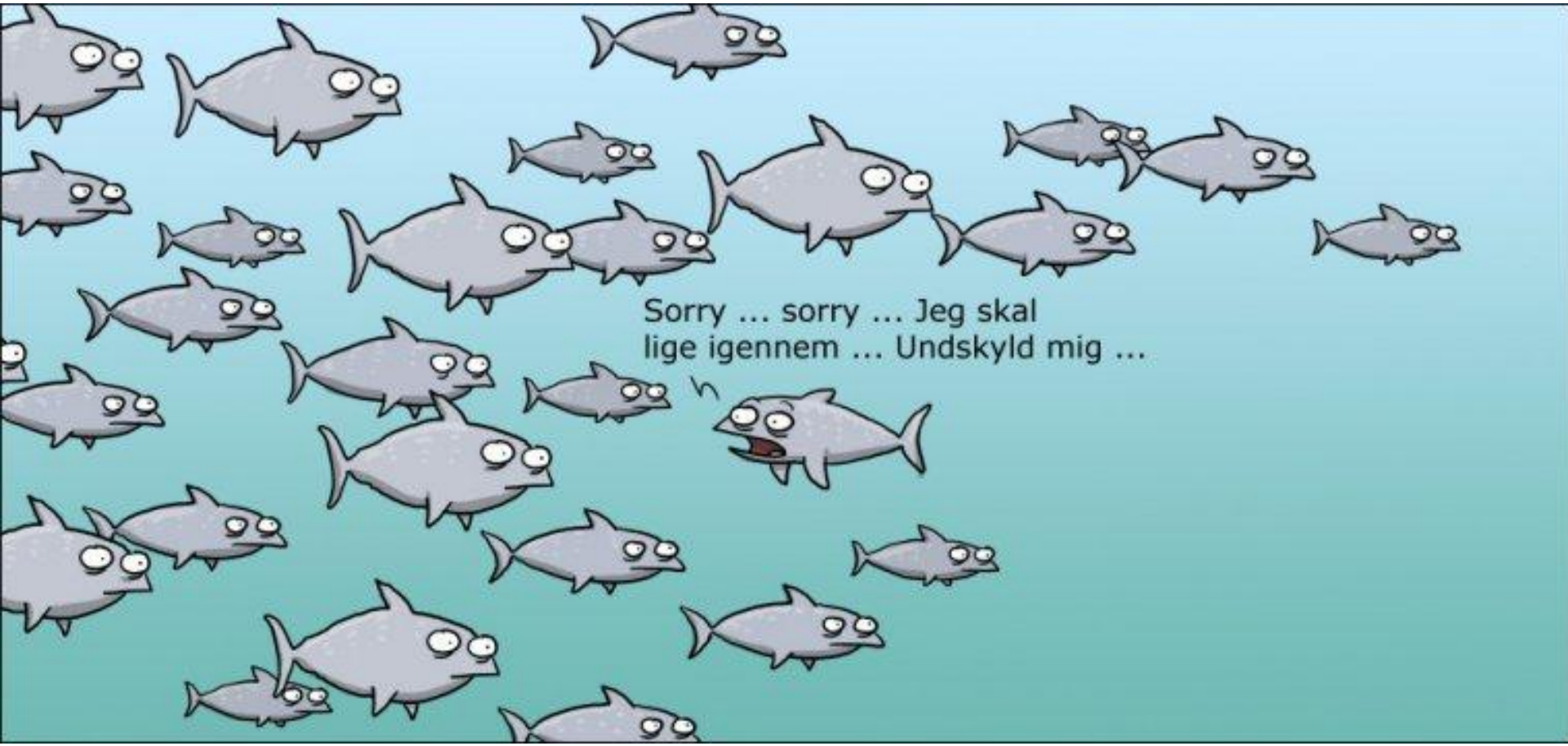
Vejledning nr. 9038 af 15. januar 2015

Sundhedsstyrelsen

National klinisk retningslinje om

INDIKATION FOR TRANSFUSION MED BLODKOMPONENTER

2014


Sorry ... sorry ... Jeg skal
lige igennem ... Undskyld mig ...

Vejledning om transfusionsmedicinsk behandling og monitorering af blødende patienter

Baggrundsnotat

Version 1.0 – 7. juni 2013

Opdateres

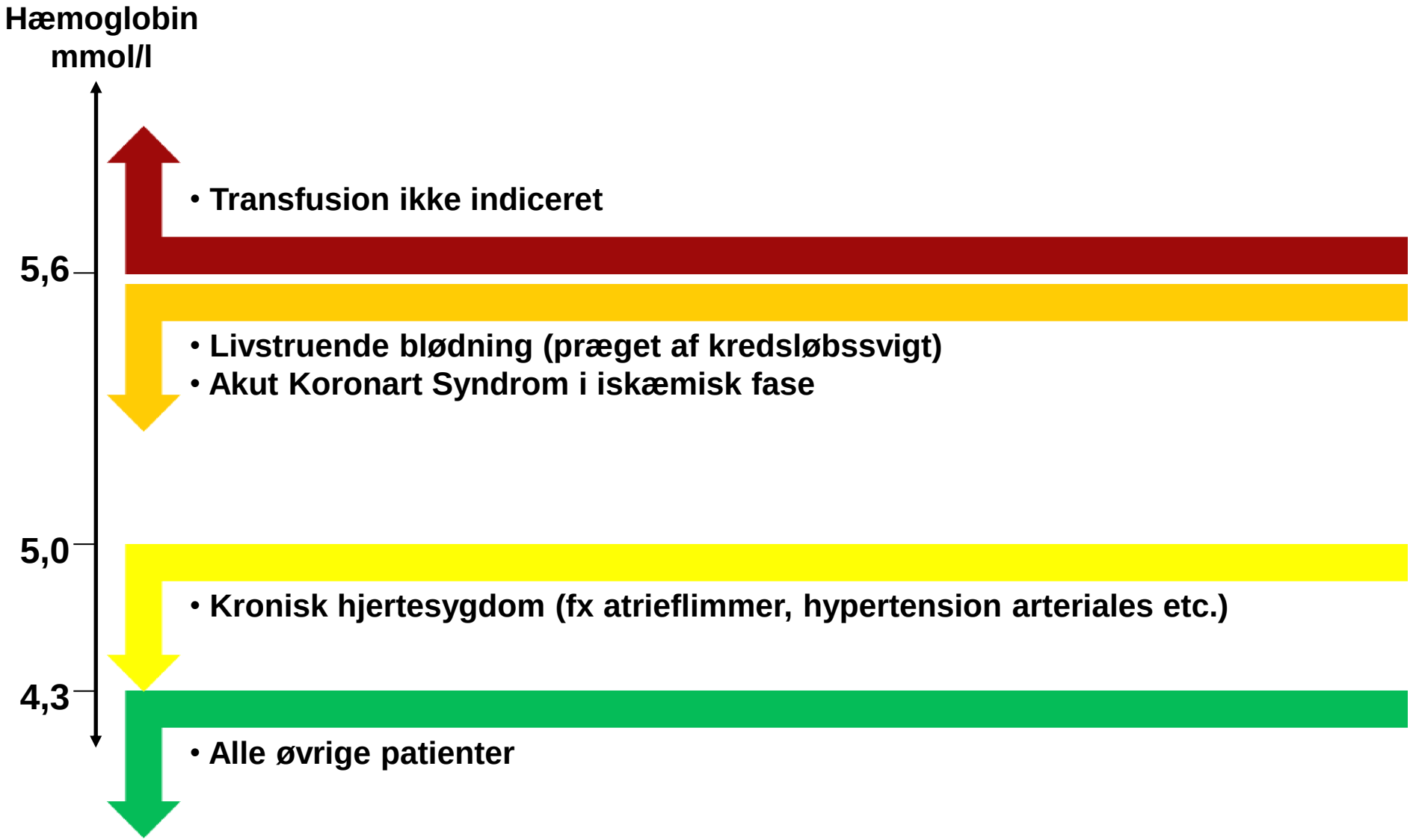
http://www.dski.dk

DSKI
Dansk Selskab for Klinisk Immunologi

Vejledningen støttes af Dansk Kirurgisk Selskab, Dansk Ortopædkirurgisk Selskab og Dansk Selskab for Anæstesi og Intensiv Medicin

Erytrocyttransfusion?

Overvejes på baggrund af en klinisk vurdering → mål hæmoglobin!



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