



UNIVERSIDAD
DE CHILE

Uso de drogas vasoactivas por vía periférica.

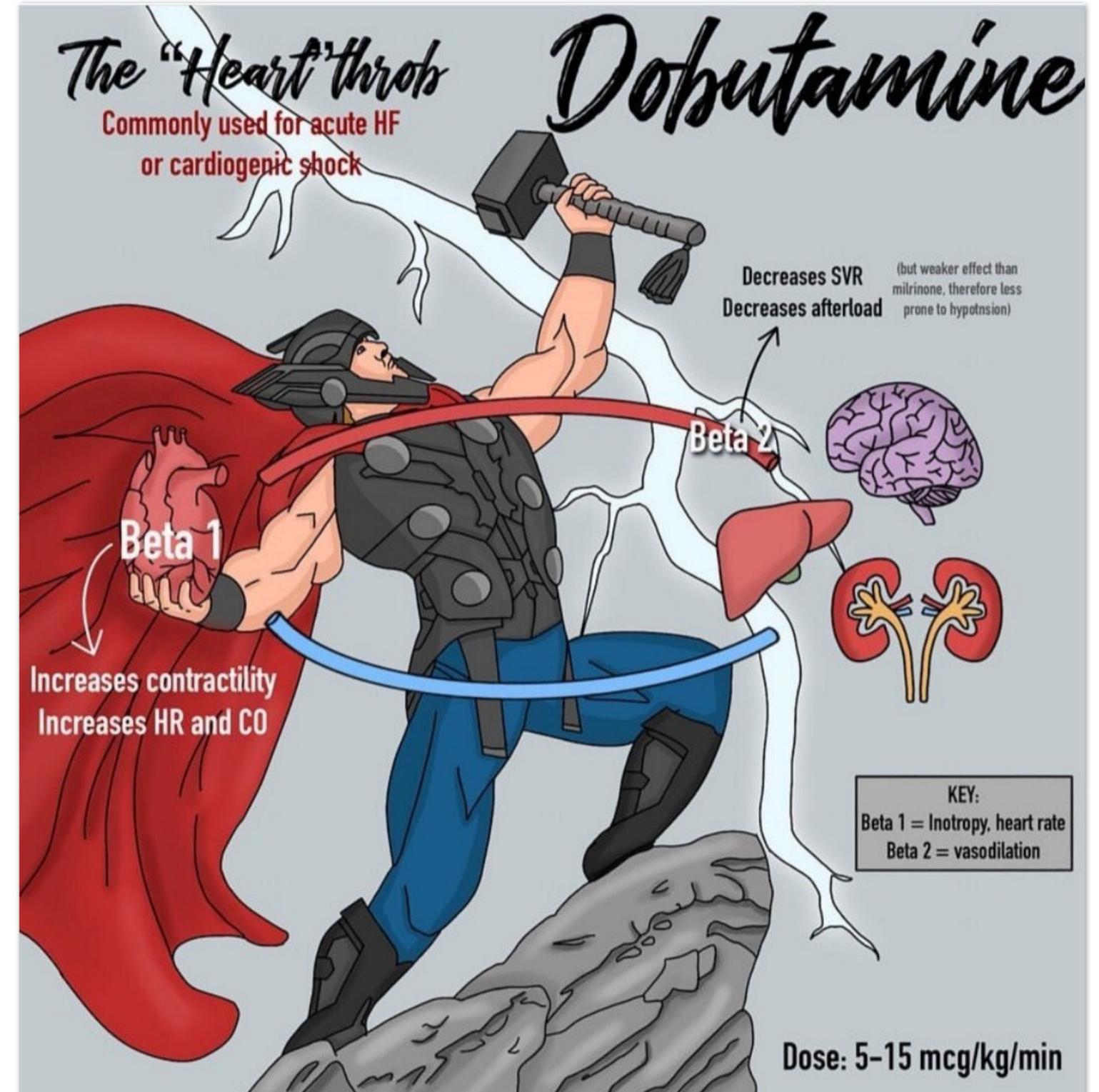
Actualizaciones y presentación de proyecto

Mayanz S., Blanch A., Cordero, M.J., Maldonado F. & Egaña J.I.

DVA por VVP

Resumen Presentación

- Actualización en hipotensión intraoperatoria (JIE)
- Uso de DVA por vía venosa periférica en la literatura (SM)
- Presentación del proyecto Anestesia HCUCH (SM)



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Dopamine (Low Dose)

A little bit confused about what to do
NOT first line, and actually has increased mortality in cardiogenic shock

Increases HR and CO at mid-range doses
BUT can cause tachyarrhythmias!

Beta 1

D1, D2

Renal vasodilation (but don't use to treat acute renal failure)

KEY:
Beta 1 = Inotropy, heart rate
Dopamine 1 & 2 = Renal vasodilation

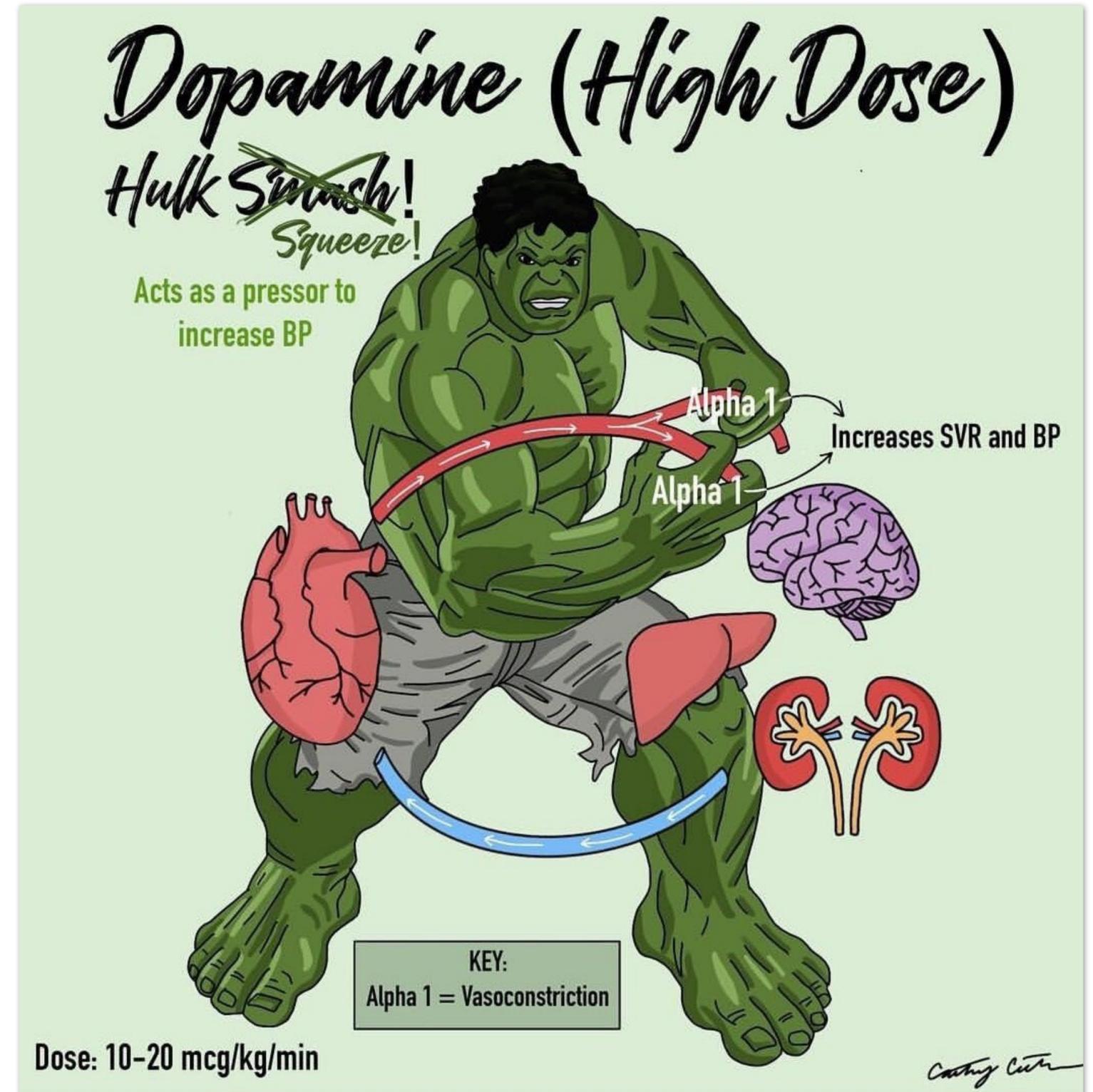
Dose: 0-5 mcg/kg/min

Coathy Ceter

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Epinephrine (Adrenaline)

Good in a crisis
Typically used for severe sepsis, ACLS, or anaphylaxis

Increases SVR and BP
Bronchidilation

Increases inotropy, HR, and CO

Alpha 1
Beta 2

Beta 1

KEY:
Alpha 1 = Vasoconstriction
Beta 1 = Inotropy, heart rate
Beta 2 = Vasodilation

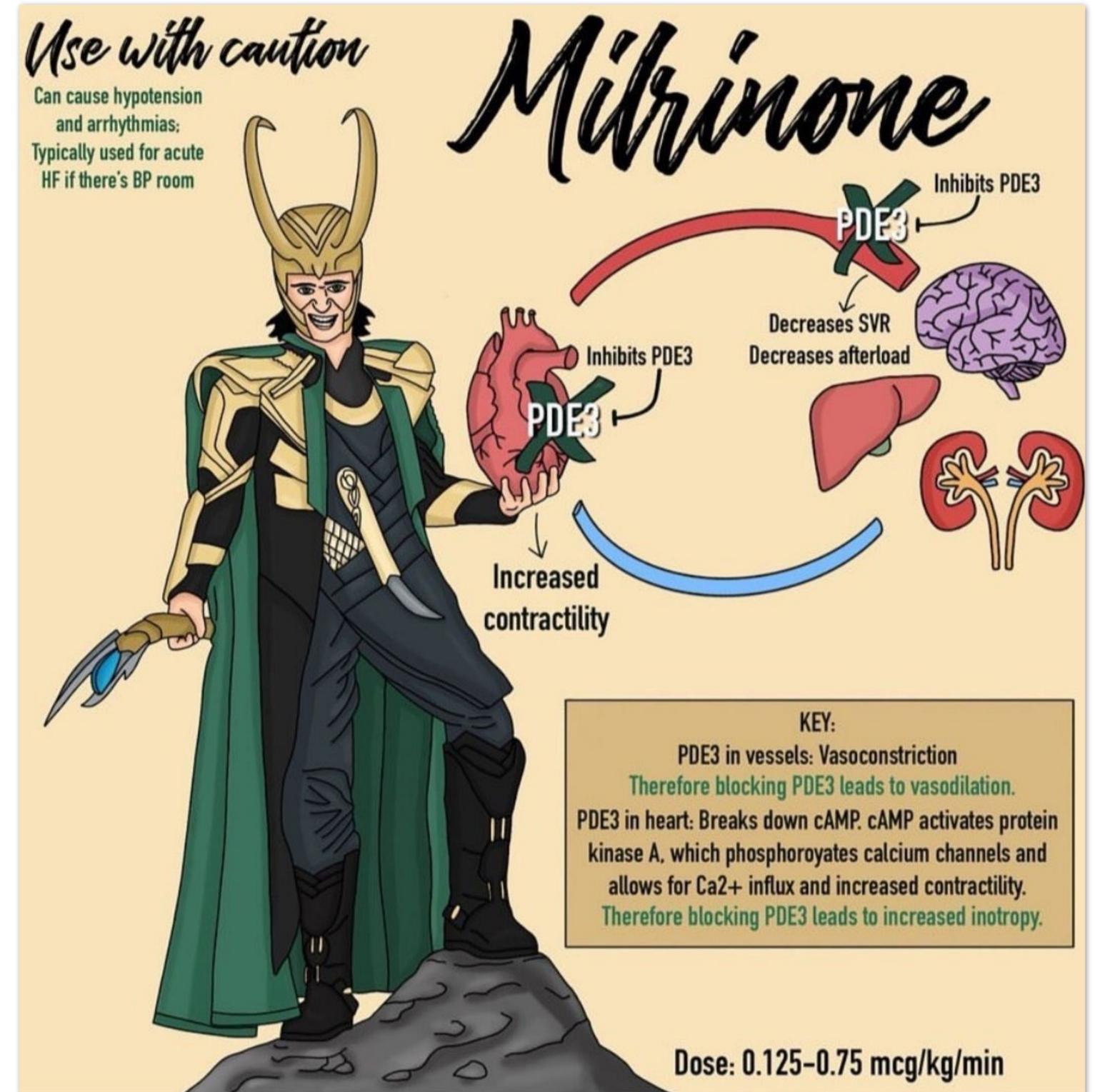
Dose: Severe septic shock: start at 2 mcg/min
ACLS: 1 mg Q3-5 min (0.1 mg/mL)
Anaphylaxis/Asthma: 0.3 mg IM (1 mg/mL)

Cathy Coen

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Phenylephrine (NeoSynephrine)

The peripheral pusher

Ok to use via peripheral IV; often given as a "push dose"
Commonly used for sepsis or during anesthesia

Alpha 1

Increases SVR and BP

May cause reflex bradycardia

Fun fact: Also used as a decongestant

KEY:
Alpha 1 = Vasoconstriction

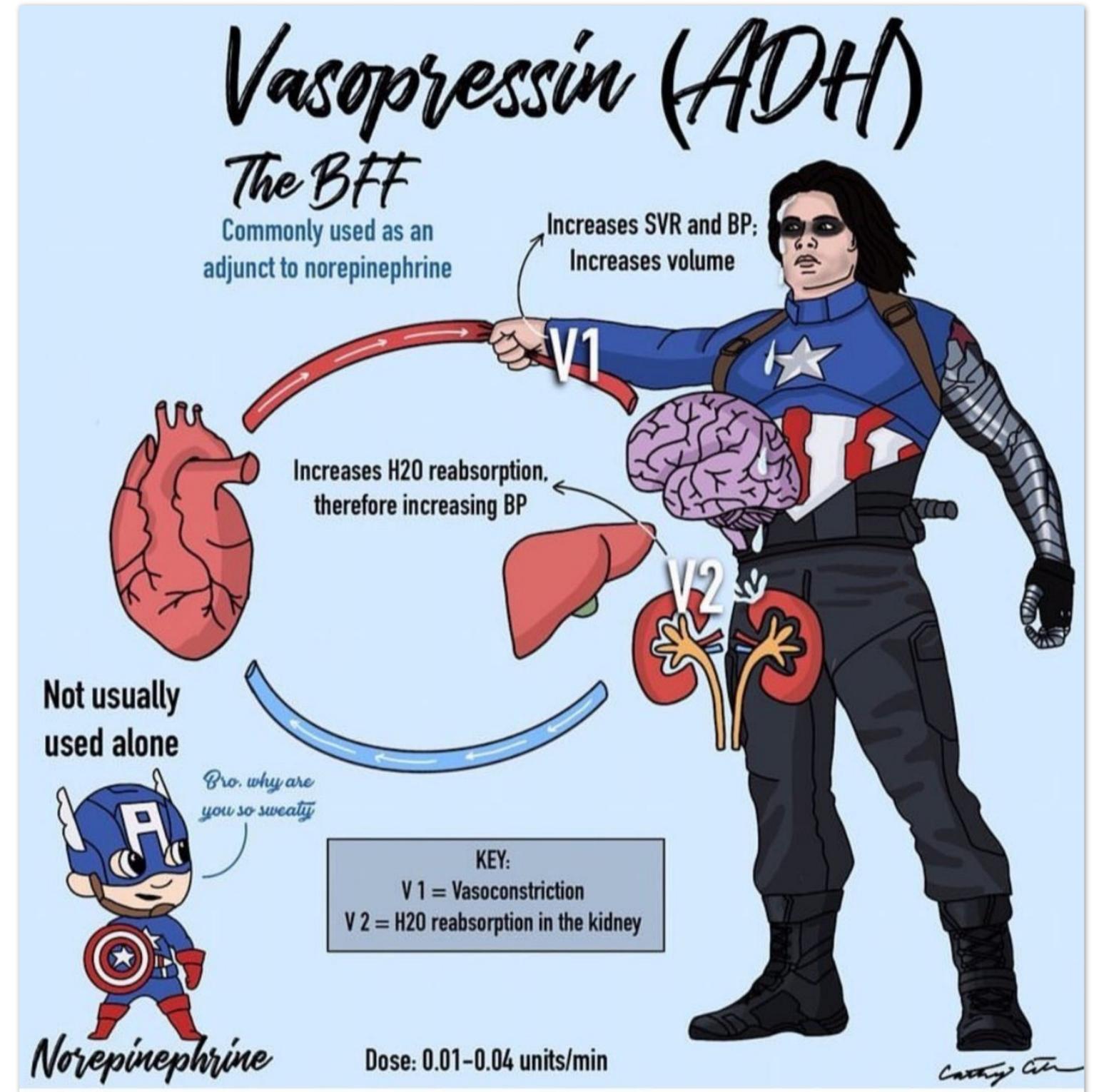
Dose: 20-200 mcg/min

Coating Art

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DVA por VVP

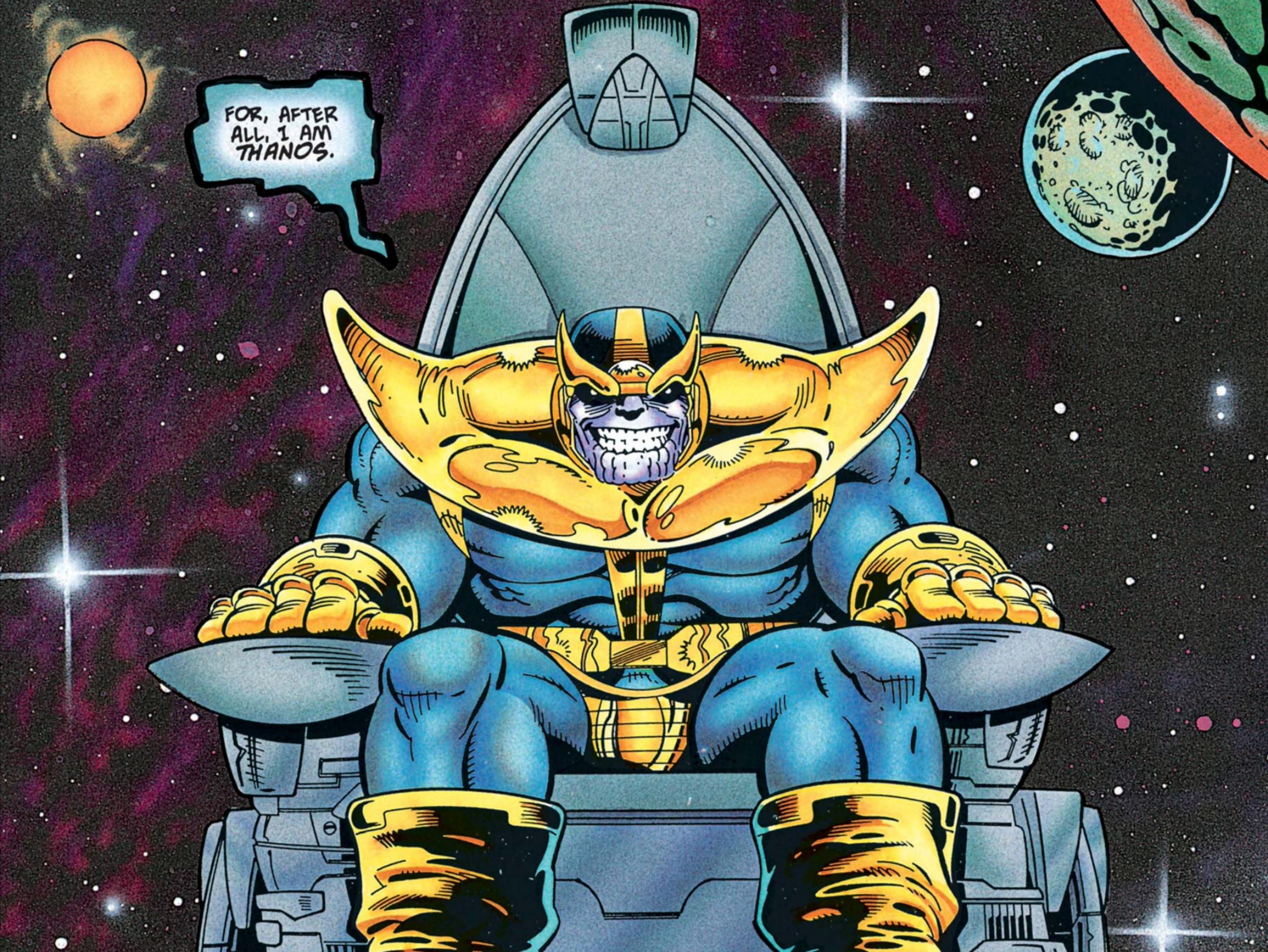
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Hipotensión intraoperatoria

FOR, AFTER
ALL, I AM
THANOS.





WHAT HAVE I
BECOME?!

Hipotensión intraoperatoria

- Becad@: “Dr., tiene PAM de 58”

Eminencia anesthesiológica: “...pérate la intubación. Ahí se arregla”

- Técnico@: “Dra., está hipotenso, ¿le pongo efe?”

Gran gurú del laringoscopio: “no te paríh...ya viene el estímulo quirúrgico”

- Intern@ electivo: “...le bajó la presión al paciente”

Campeón nacional de la espinal: “...no le va a pasar nada. No es mucho y el paciente es joven”

“Las realidades locales no constituyen evidencia en medicina”

Patricio Alvarez

Anesthetic Management and One-Year Mortality After Noncardiac Surgery

Terri G. Monk, MD, MS*, Vikas Saini, MD, FACCT†, B. Craig Weldon, MD*, and Jeffrey C. Sigl, PhD‡

*Department of Anesthesiology, Duke University Medical Center, Durham, North Carolina, †The Cardiovascular Specialists LLC, Hyannis, Massachusetts, ‡Aspect Medical Systems, Newton, Massachusetts

Manejo anestésico

Monk et. al 2005

- Prospectivo, observacional
- Cirugía no cardíaca
- 1064 pacientes
- Mortalidad
 - 0.7% a 30 días
 - 5.5% a un año

Table 2. Univariate Predictors of 1-yr Postoperative Mortality

Predictor	Relative risk (odds ratio) [95% CI]	P value
Comorbidity (3+ versus 0–2)	13.901 (7.722–25.027)	<0.0001
ASA physical status (Class 3, 4 versus Class 1)	8.300 (2.009–34.289)	0.0035
Age (65+ versus 18–39 yr)	4.459 (2.032–9.784)	0.0002
History of hepatic disease	3.591 (1.764–7.310)	0.0004
History of previous myocardial infarction	3.529 (1.733–7.183)	0.0005
History of heart disease	2.174 (1.128–4.192)	0.0204
History of hypertension	1.944 (1.162–3.254)	0.0114
Cumulative deep hypnotic time (per h)	1.335 (1.132–1.574)	0.0006
Surgical duration (per h)	1.218 (1.056–1.405)	0.0067
Intraoperative systolic blood pressure <80 mm Hg (per min)	1.044 (1.016–1.072)	0.0017
Body mass index	0.968 (0.937–1.000)	0.0494
Preoperative diastolic blood pressure	0.963 (0.942–0.985)	0.0010
Educational level (yr)	0.878 (0.794–0.972)	0.0118
Preoperative Mini-Mental State Examination (per unit)	0.829 (0.700–0.982)	0.0298
Type of surgery		
Minimally invasive or superficial versus intracavitary	0.308 (0.123–0.774)	0.0123
Orthopedic versus intracavitary	0.217 (0.086–0.545)	0.0011

CI = confidence interval.

Manejo anestésico

Monk et. al 2005

Table 4. Multivariate Predictors of 1-yr Postoperative Mortality

Predictor	Relative risk (odds ratio) [bootstrapped 95% CI]	<i>P</i> value
Charlson Comorbidity Score (3+ versus 0–2)	16.116 (10.110–33.717)	<0.0001
Cumulative deep hypnotic time (per h)	1.244 (1.062–1.441)	0.0121
Systolic blood pressure <80 mm Hg (per min)	1.036 (1.006–1.066)	0.0125

CI = confidence interval.

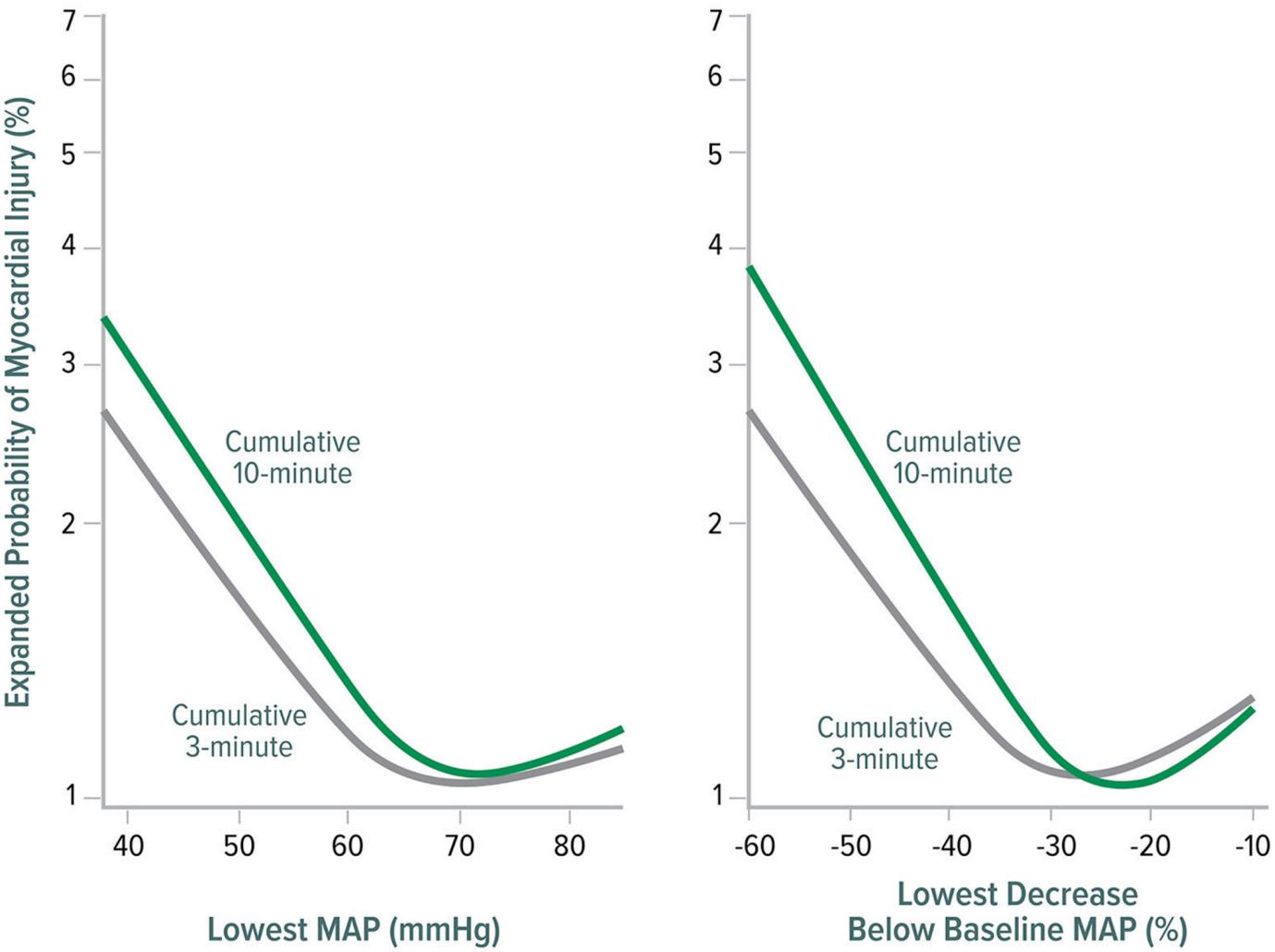
¿De qué se complican / mueren?

Injuria miocárdica

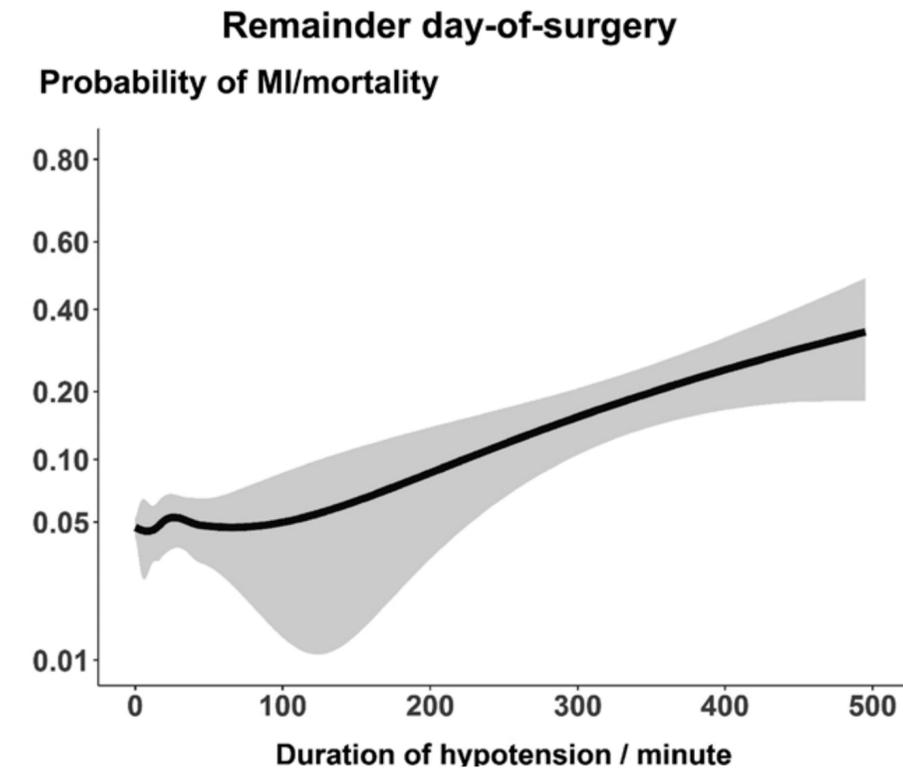
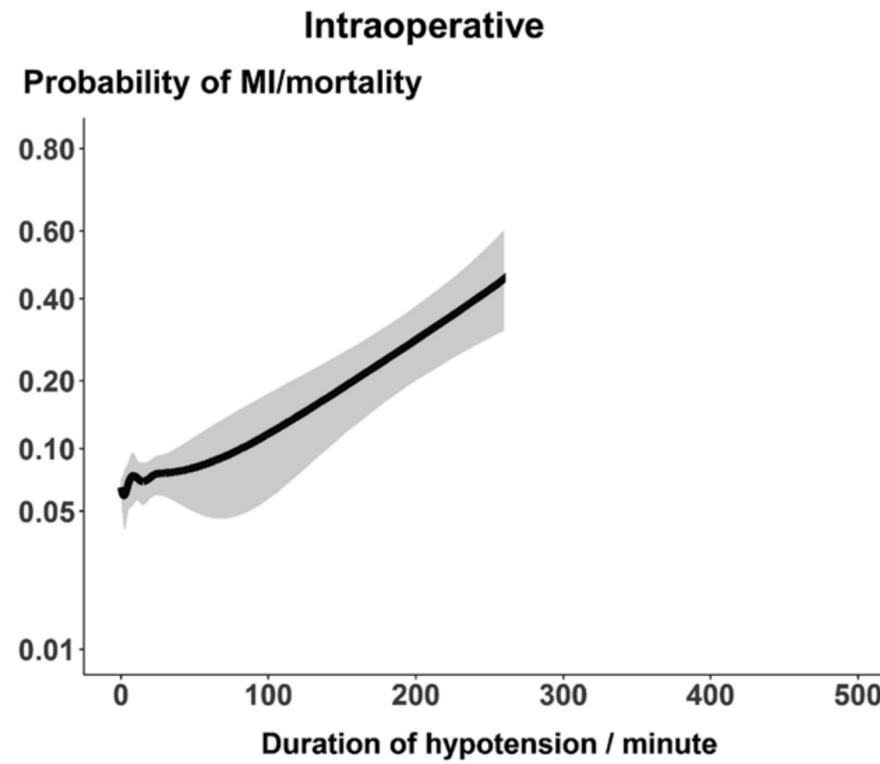
Table 5 Risk for MACCE corresponding to each of the variables selected for the logistic regression model. *Logistic regression model (c-index=0.759; Hosmer–Lemeshow $\chi^2=0.828$; $P=0.844$). OR, odds ratio; CI, confidence interval; RBC, red blood cell. See Table 4 for variables not entered into the final model. Because of a missing value in some variables, data for 251 (7.4%) patients were excluded from the model. †The simplified risk score was obtained by rounding off the β -logistic regression coefficient

	Bivariate analysis [OR (95% CI)], <i>n</i>=3387	Multivariable analysis* [OR (95% CI)], <i>n</i>=3136	Bootstrap resampling (1000 bootstrap subsamples) [80% CI of the OR]	β-coefficients	Risk score[†]
History of coronary artery disease	3.9 (2.6–5.7)	2.2 (1.3–3.5)	1.4–2.8	0.775	1
History of chronic congestive heart failure	4.3 (2.8–6.6)	2.3 (1.4–3.9)	1.3–2.9	0.831	1
Chronic kidney disease	4.2 (2.8–6.4)	1.9 (1.2–3.2)	1.2–2.5	0.674	1
History of cerebrovascular disease	3.2 (2.1–5.02)	2.9 (1.7–4.7)	1.6–3.4	1.055	1
Abnormal ECG	3.7 (2.5–5.3)	1.9 (1.3–2.9)	1.3–2.3	0.664	1
Intraoperative hypotension	3.4 (2.3–5.01)	2.3 (1.5–3.7)	1.6–3.1	0.849	1
RBC transfusion	3.8 (2.7–4.4)	2.7 (1.9–4.1)	1.8–3.3	1.019	1

Injuria miocárdica



Anesthesiology. 2017;126:47-65



Anesthesiology. 2018 Feb;128(2):317-327

Injuria renal

Association of Intraoperative Hypotension with Acute Kidney Injury after Elective Noncardiac Surgery

Louise Y. Sun, M.D., S.M., Duminda N. Wijeyesundera, M.D., Ph.D., Gordon A. Tait, Ph.D., W. Scott Beattie, M.D., Ph.D.

Table 6. Comparison of Odds Ratios of Acute Kidney Injury across Primary and Sensitivity Analyses in Patients with Mean Arterial Pressure < 55 mmHg

Analysis	Duration of Intraoperative Hypotension (min)				
	0	1–5	6–10	11–20	>20
Primary analysis	Reference	1.35 (0.98–1.86)	1.45 (0.94–2.22)	2.34 (1.35–4.05)	3.53 (1.51–8.25)
AKIN stage II	Reference	0.79 (0.44–1.43)	1.29 (0.61–2.72)	0.79 (0.22–2.87)	4.86 (1.38–17.10)
Adjusted for intraoperative blood loss	Reference	1.24 (0.90–1.71)	1.28 (0.83–1.97)	2.04 (1.17–3.56)	3.11 (1.31–7.40)
Excluded patients without postoperative Cr measurement	Reference	1.33 (0.97–1.84)	1.41 (0.92–2.16)	2.10 (1.21–3.65)	3.53 (1.50–8.26)
Restricted to patients with preoperative eGFR > 60 ml/min	Reference	1.22 (0.85–1.77)	1.44 (0.88–2.35)	1.96 (0.99–3.88)	3.49 (1.25–9.74)

All models are age, gender, comorbidity, and surgery adjusted.

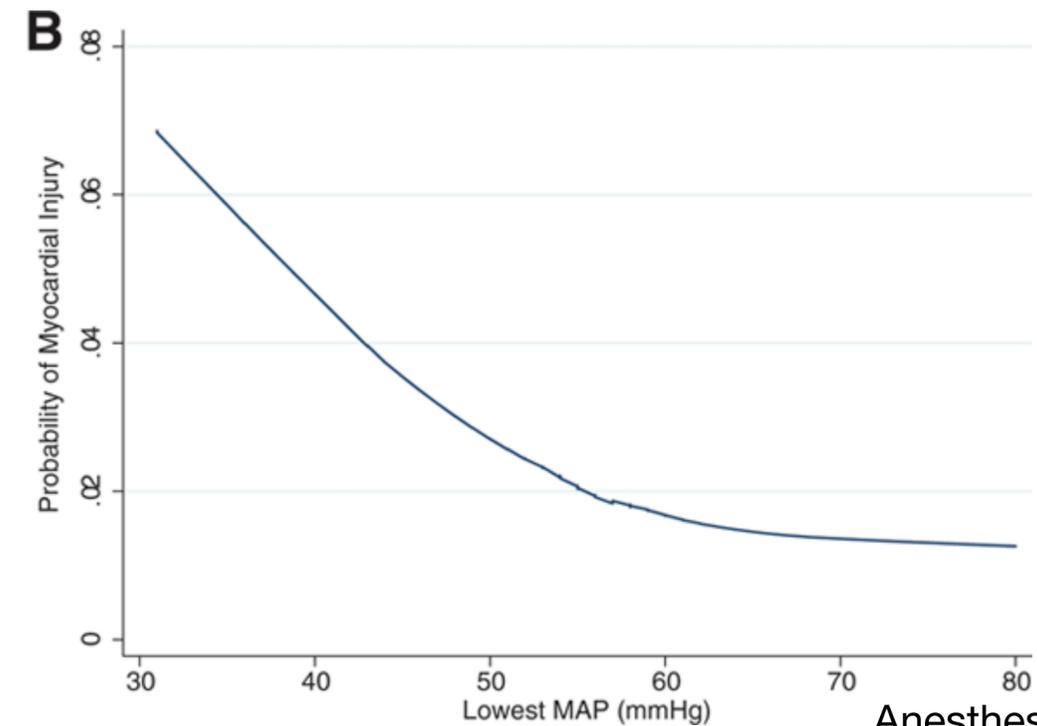
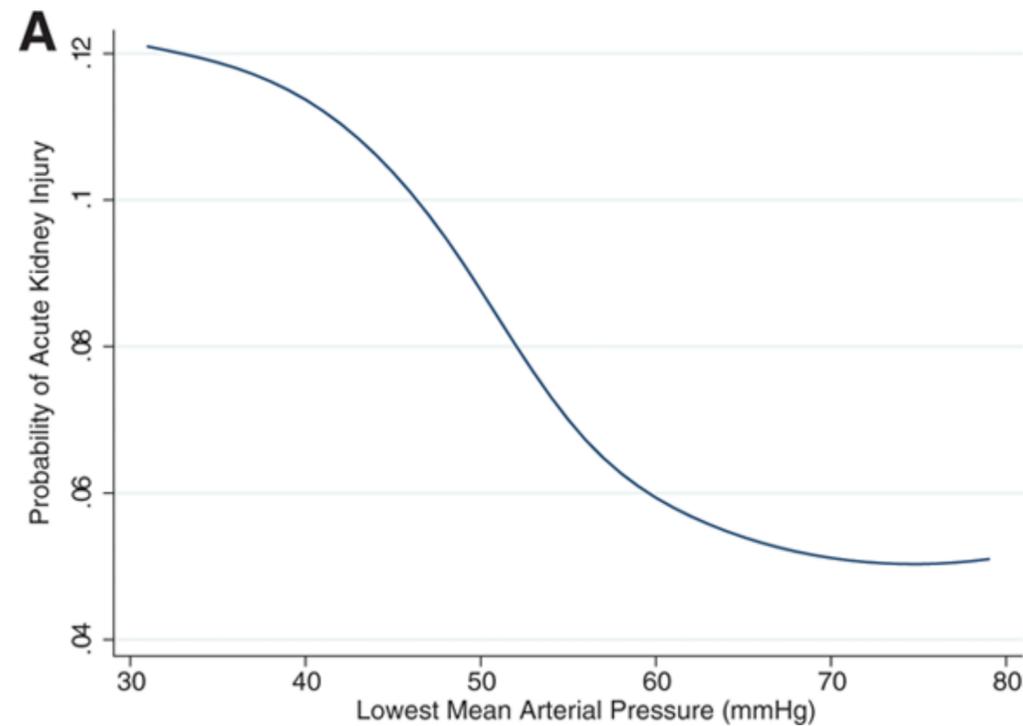
AKIN = Acute Kidney Injury Network; Cr = serum creatinine; eGFR = estimated glomerular filtration rate, as determined by the Cockcroft-Gault formula.

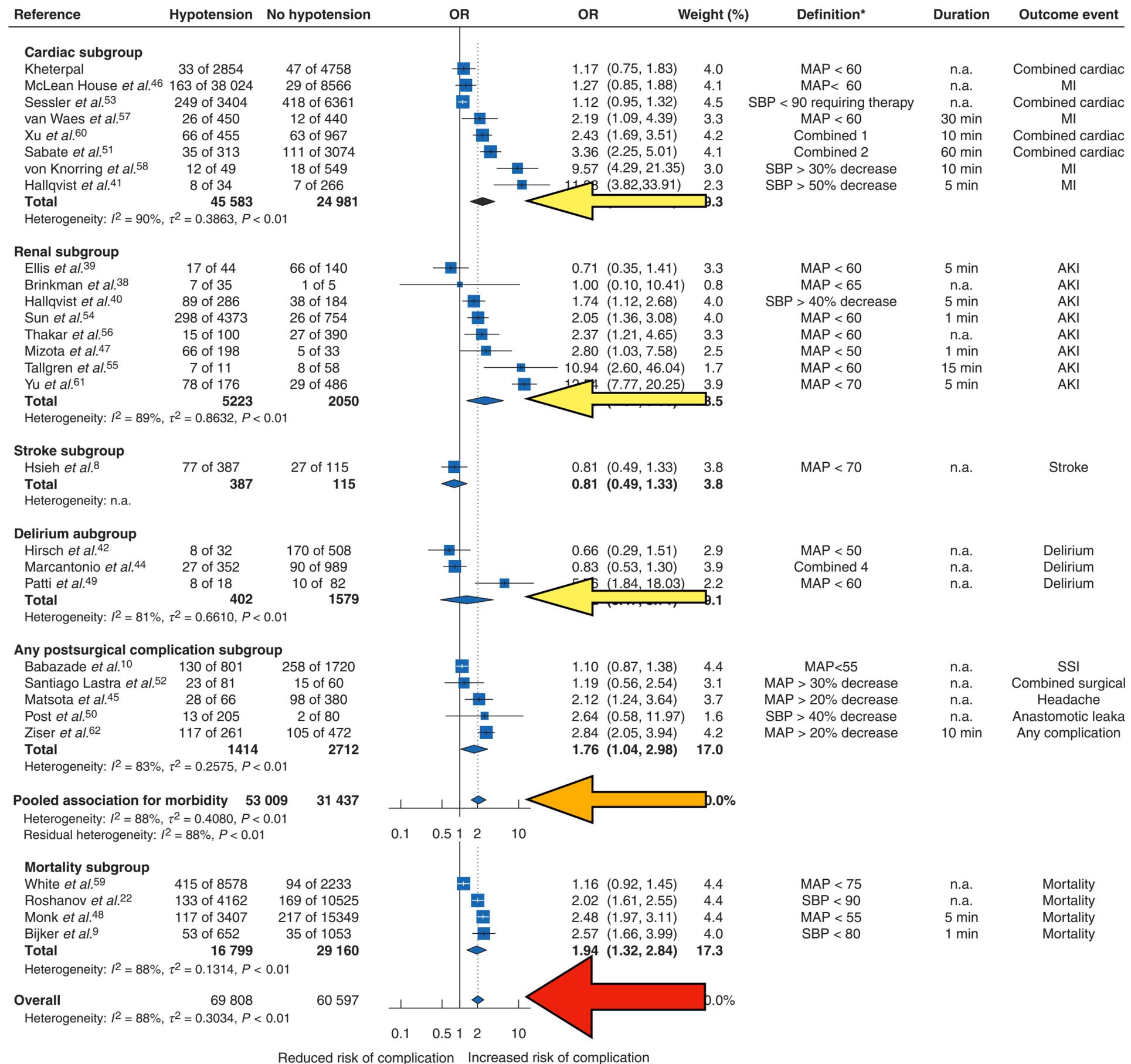
Injuria renal

Relationship between Intraoperative Mean Arterial Pressure and Clinical Outcomes after Noncardiac Surgery

Toward an Empirical Definition of Hypotension

Michael Walsh, M.D.,* Philip J. Devereaux, M.D., Ph.D.,† Amit X. Garg, M.D., Ph.D.,‡
Andrea Kurz, M.D.,§ Alparslan Turan, M.D.,|| Reitze N. Rodseth, M.D.,# Jacek Cywinski, M.D.,**
Lehana Thabane, Ph.D.,†† Daniel I. Sessler, M.D.‡‡





Los pacientes que se hipotensan en el intraoperatorio

- Tienen más complicaciones cardíacas
- Desarrollan falla renal con más probabilidad
- Tienen mucho mayor riesgo (el doble) de cualquier complicación postoperatoria
- Se mueren más. El doble
- Entre el 25-37% de las hipotensiones ocurren entra la inducción y la incisión...

OH, Y AHORA

QUIEN PODRA DEFENDERNOS ?