

PRISE EN CHARGE ET COMPLICATIONS APRÈS UNE REVASCULARISATION

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Néphrologue

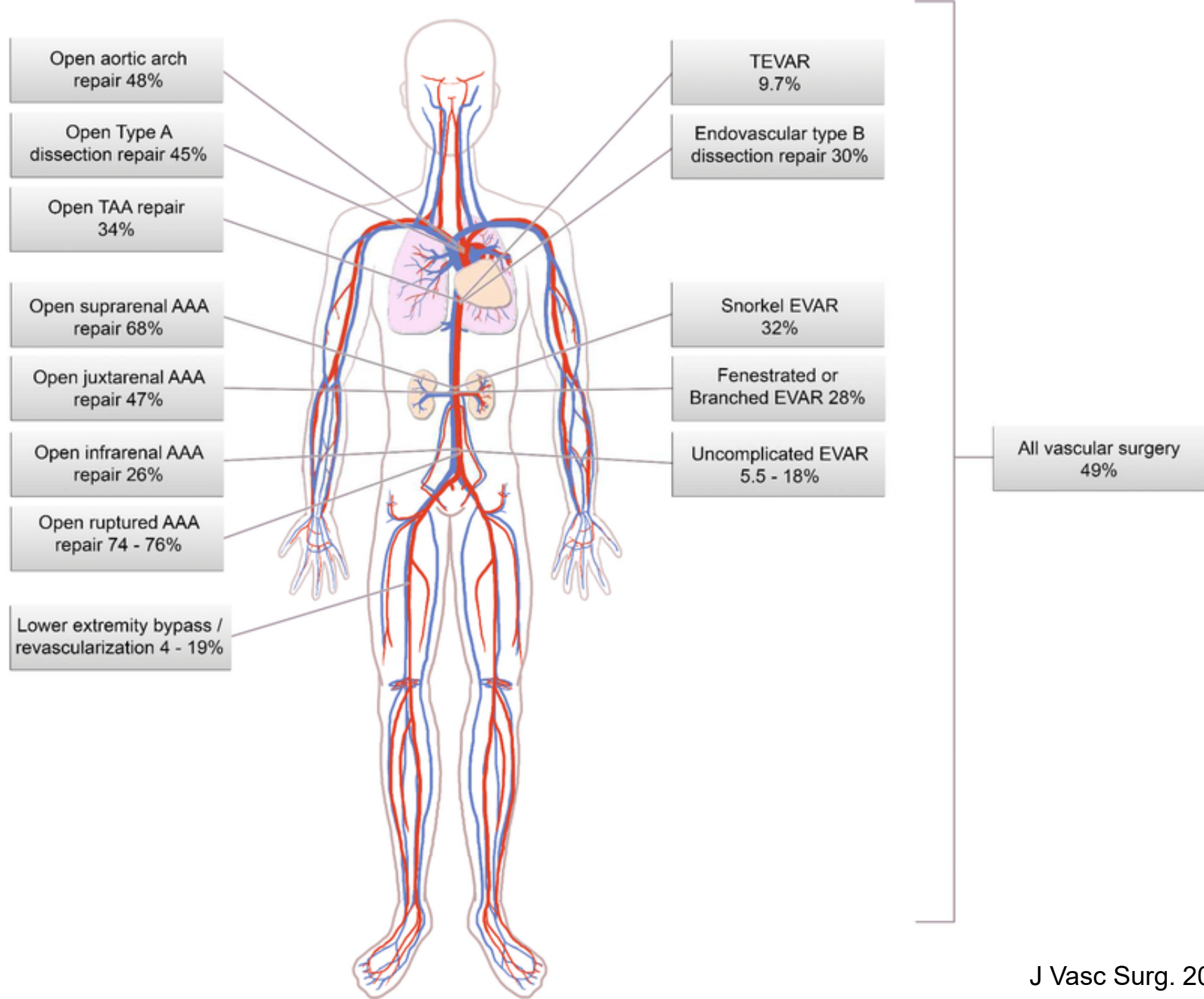
- Insuffisance rénale aiguë postopératoire
 - Définition
 - Prévalence après une revascularisation
 - Causes – bilan étiologique
 - Prévention
- Deux RCT ayant inclus des patients avec IRC de stade G4-G5
 - EVAR 2
 - ISCHEMIA CKD

IRA postopératoire

- IRA selon KDIGO dans les 7 jours suivant une intervention

Table 2 | Staging of AKI

Stage	Serum creatinine	Urine output
1	1.5–1.9 times baseline OR ≥0.3 mg/dl (≥26.5 μmol/l) increase	<0.5 ml/kg/h for 6–12 hours
2	2.0–2.9 times baseline	<0.5 ml/kg/h for ≥12 hours
3	3.0 times baseline OR Increase in serum creatinine to ≥4.0 mg/dl (≥353.6 μmol/l) OR Initiation of renal replacement therapy OR, In patients <18 years, decrease in eGFR to <35 ml/min per 1.73 m ²	<0.3 ml/kg/h for ≥24 hours OR Anuria for ≥12 hours



Preoperative factors

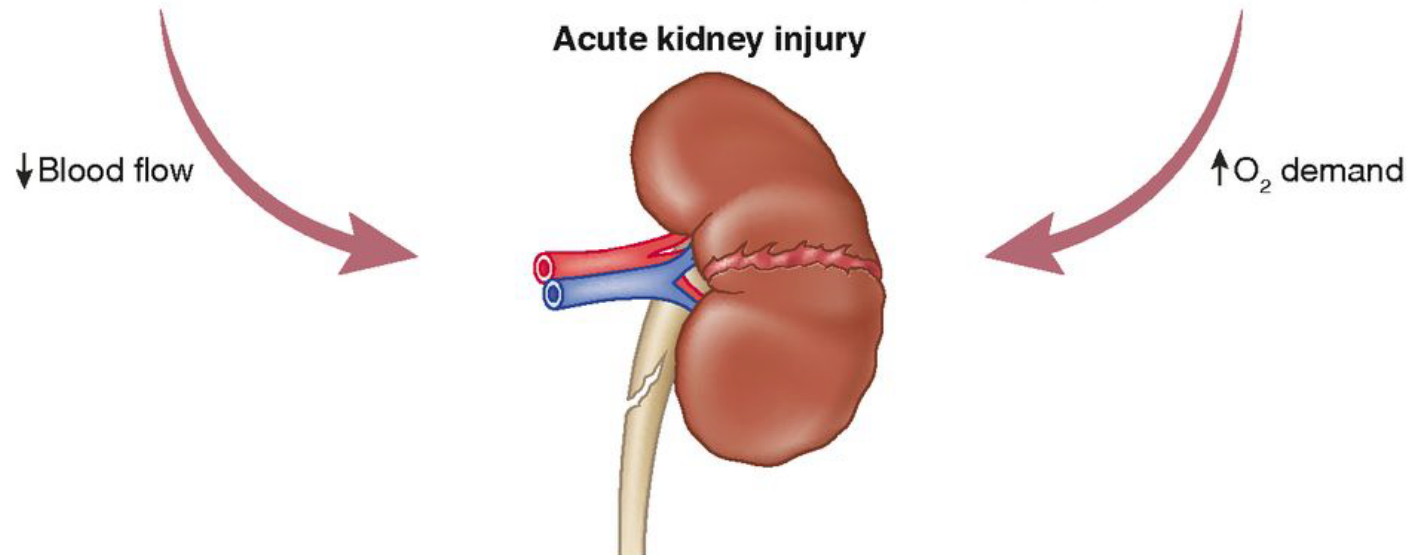
- Preexisting kidney dysfunction
- Diabetes
- Cardiac dysfunction
- Age
- Sepsis
- Volume depletion
- Hepatic failure
- Crush injury
- Exposure to nephrotoxins

Intraoperative factors

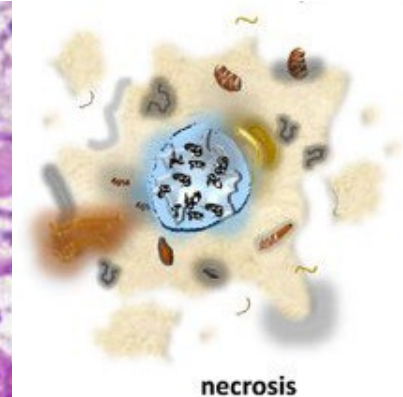
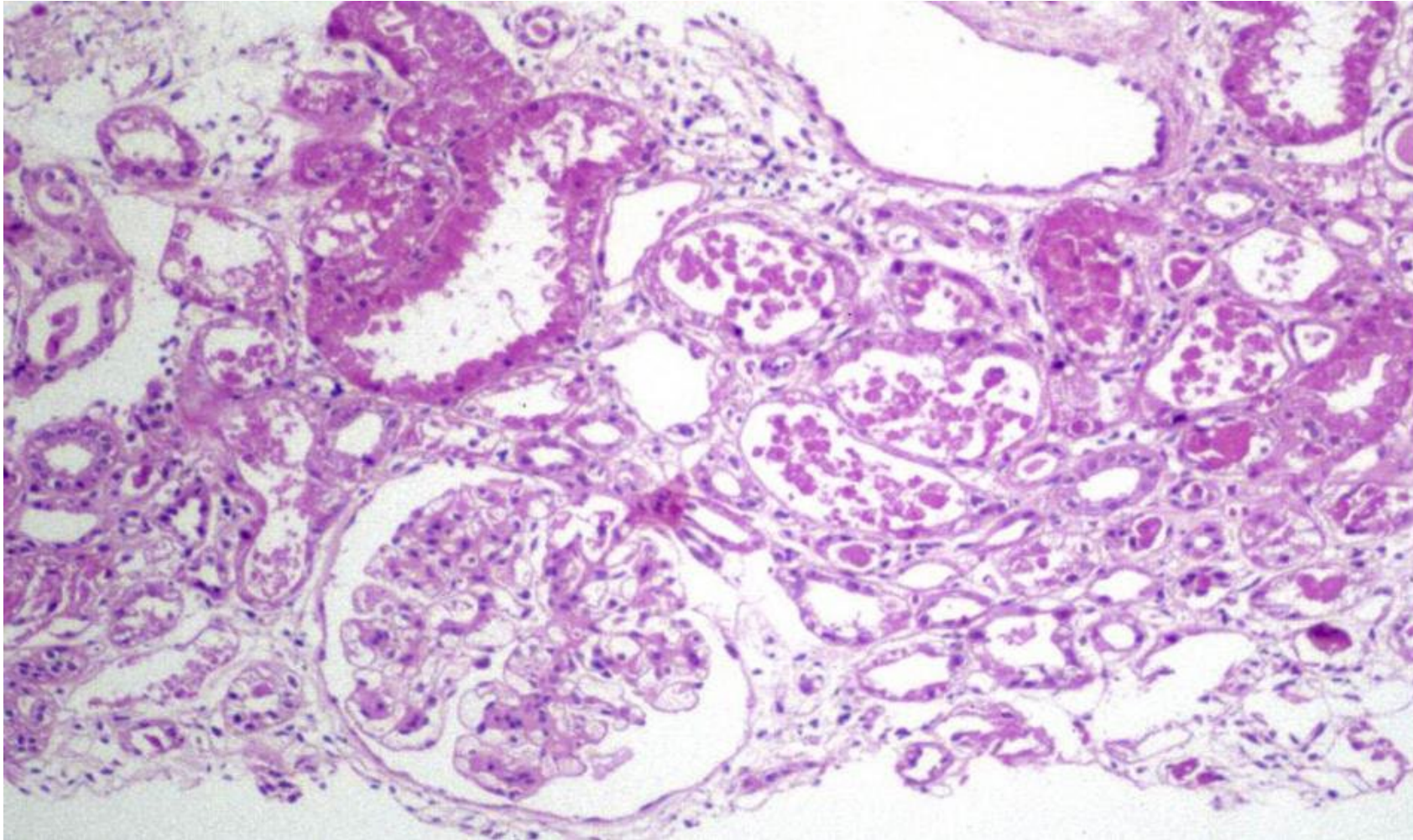
- Hypovolemia (caused by bleeding and insensible fluid losses)
- Kidney ischemia
- Inflammation
- Increased intra-abdominal pressure
- Decreased cardiac output (caused by anesthetic)
- Vasodilatation (caused by anesthetic)
- Exposure to nephrotoxins
- Embolism

Postoperative factors

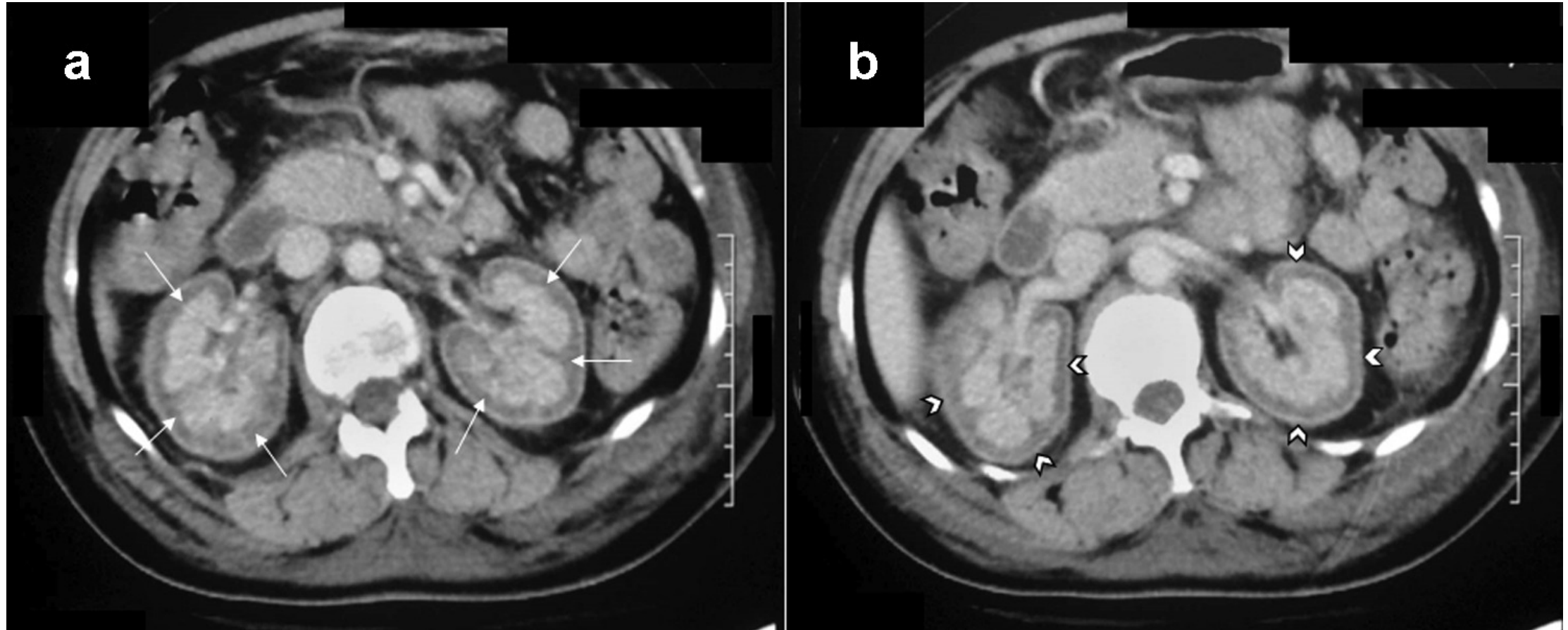
- Hypovolemia (caused by bleeding and insensible fluid losses)
- Kidney ischemia
- Inflammation
- Increased intra-abdominal pressure
- Decreased cardiac output (caused by anesthetic)
- Vasodilatation (caused by anesthetic)
- Exposure to nephrotoxins
- Urinary obstruction
- Acute lung injury
- Mechanical ventilation



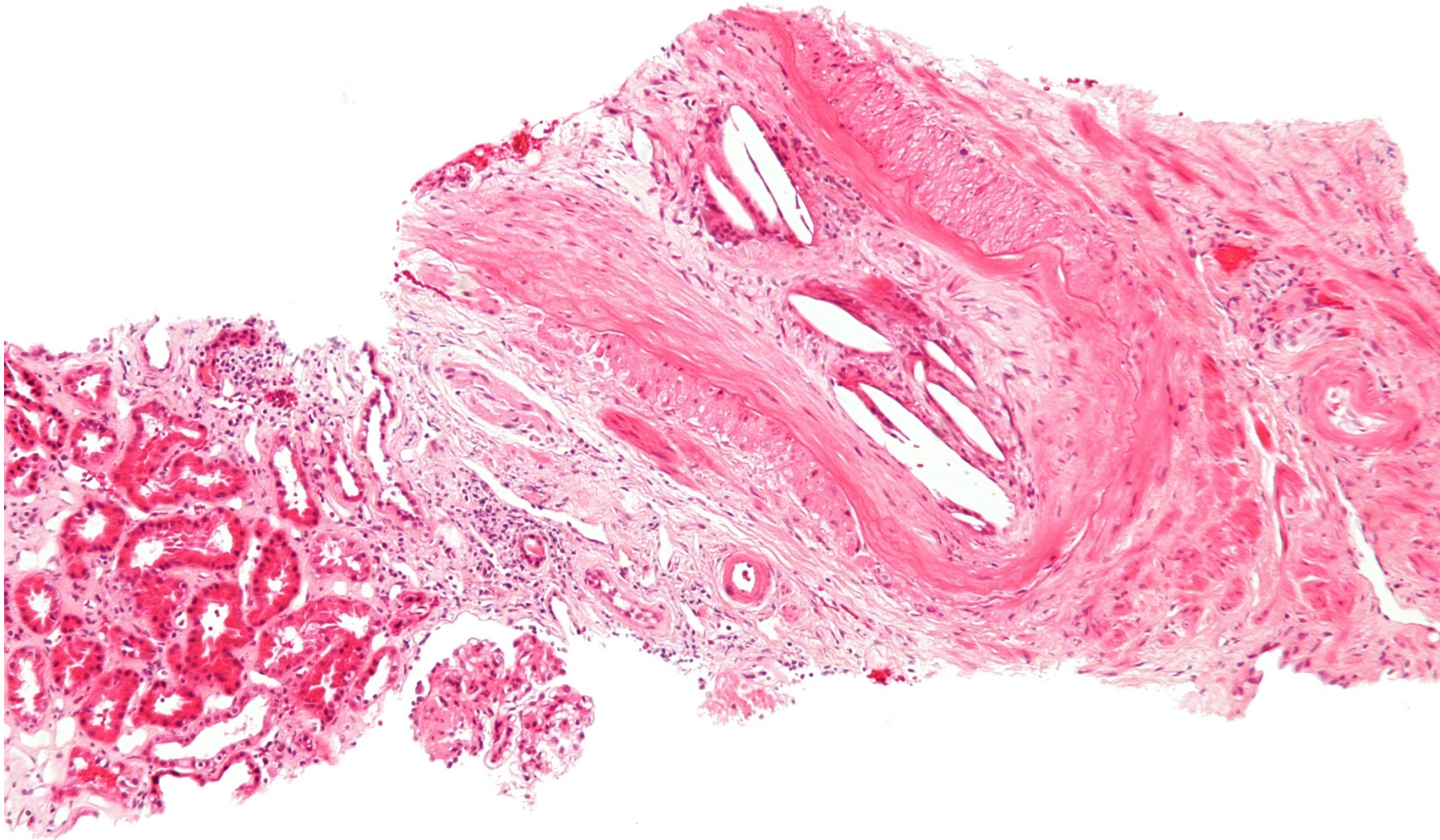
CAUSE N°1: Nécrose tubulaire aiguë (NTA)



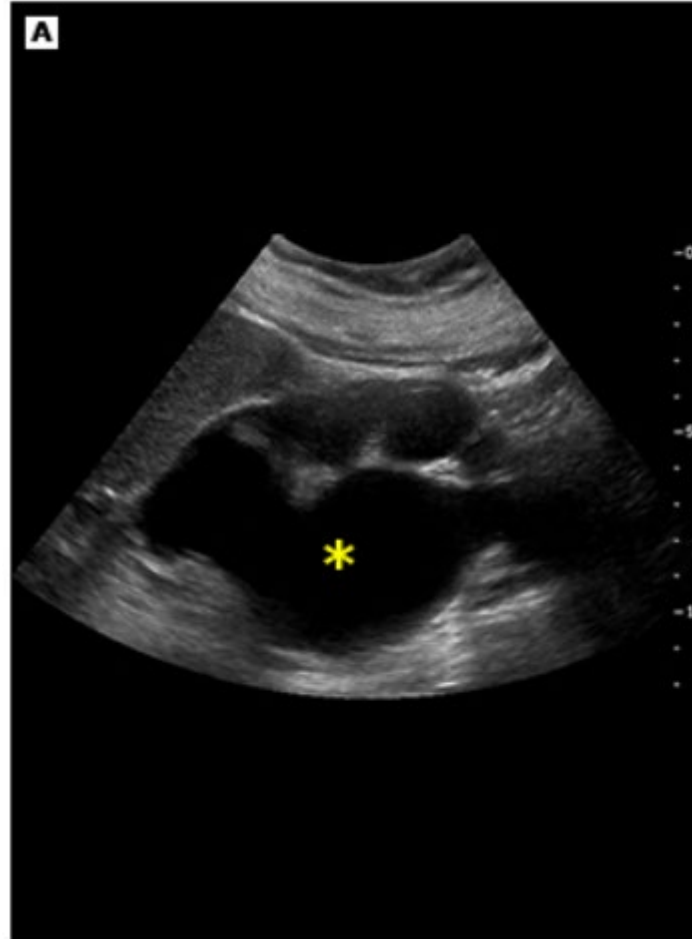
Rare: Nécrose corticale



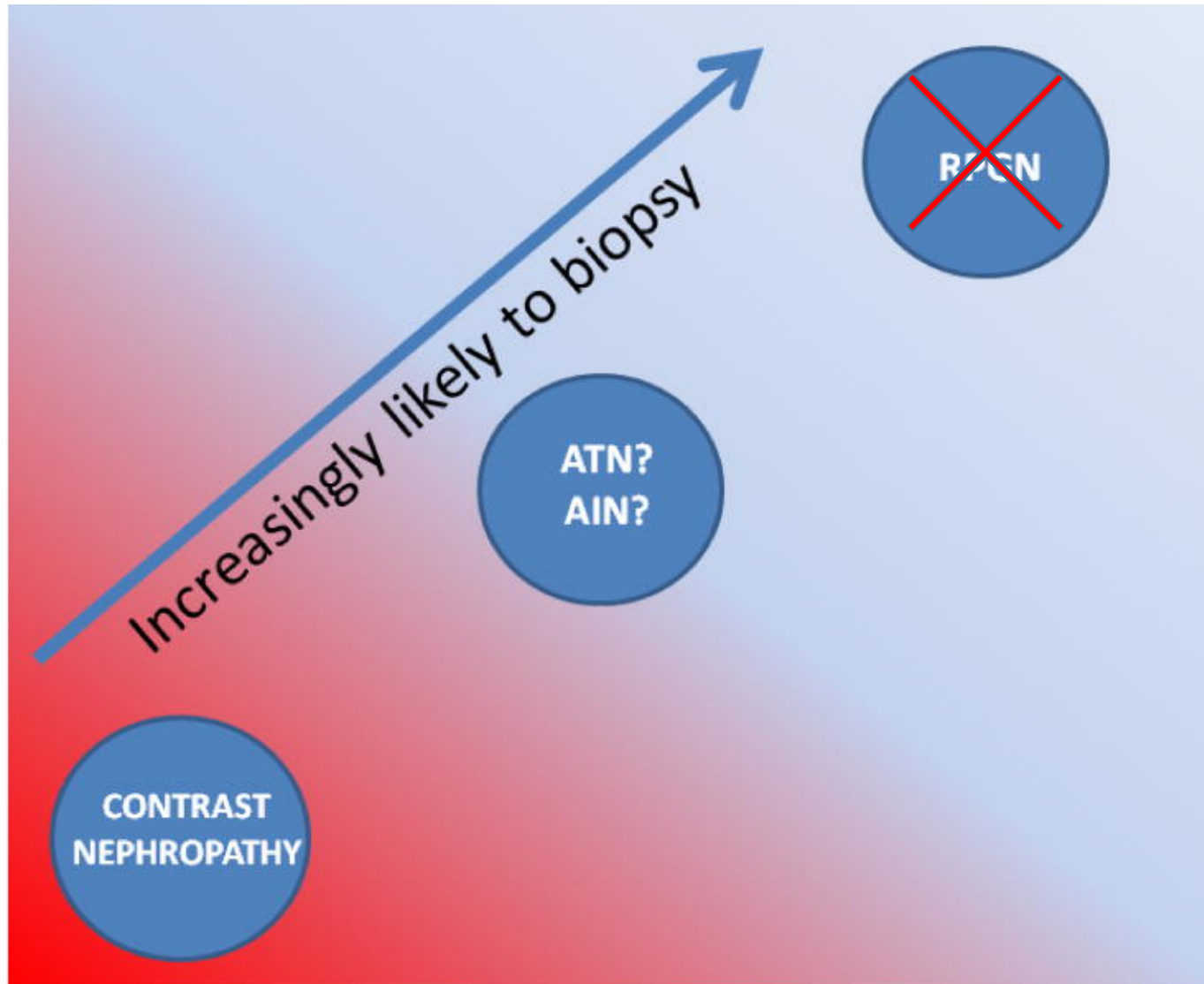
Rare: Emboles de cholestérol



Diagnostics différentiels

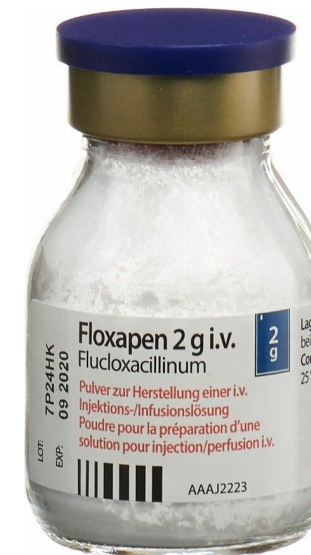


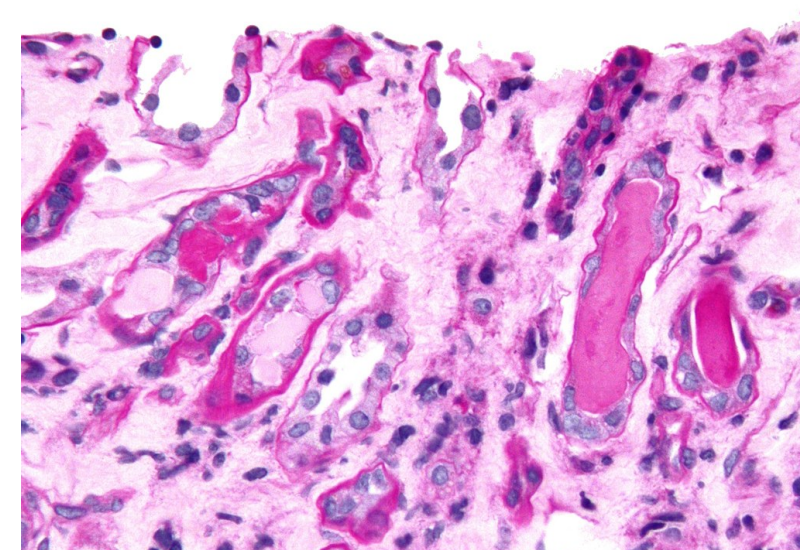
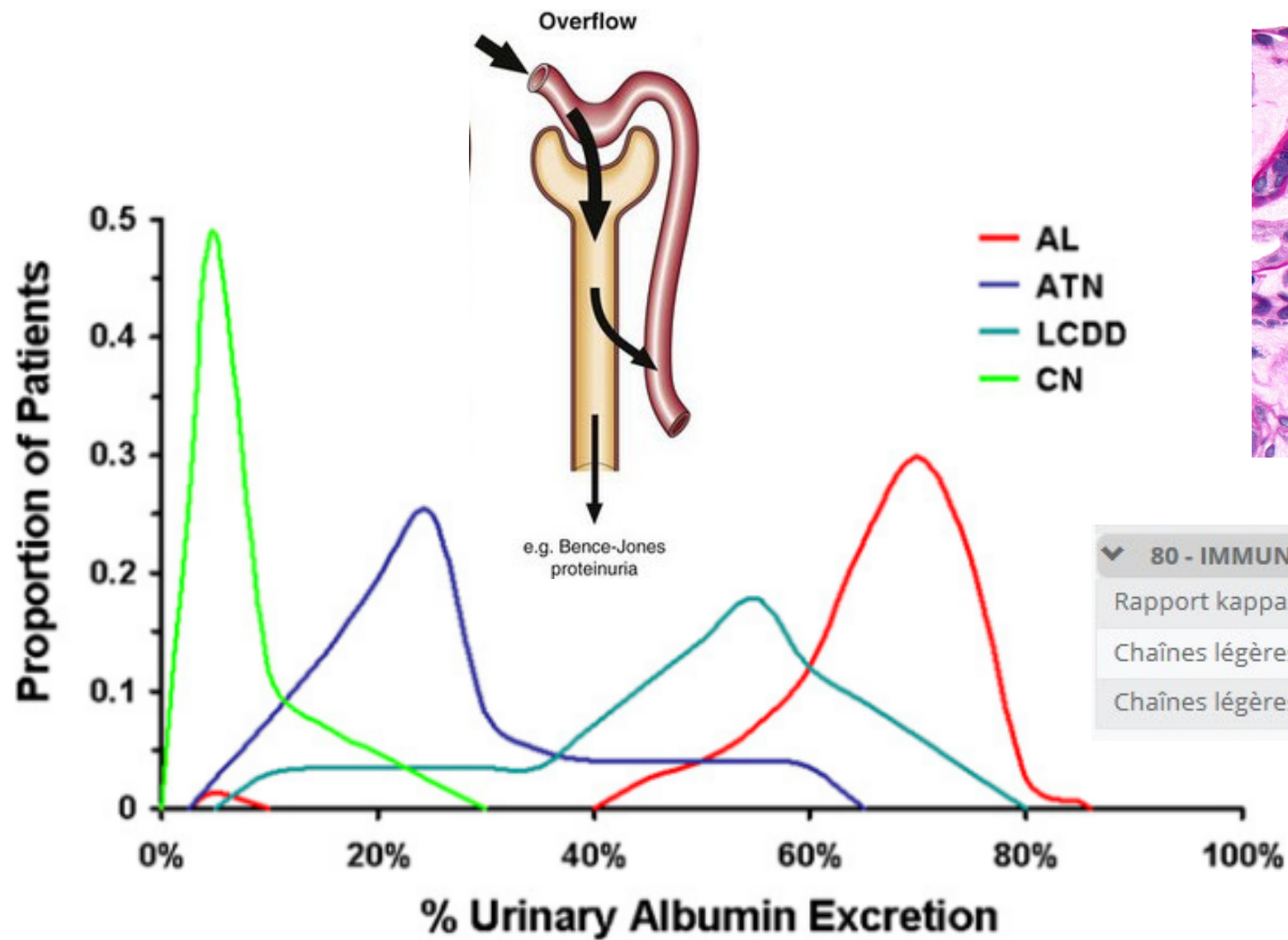
THERAPEUTIC RELEVANCE



DIAGNOSTIC UNCERTAINTY

Nephrotoxicity (OR, 0.36)





80 - IMMUNOLOGIE ET PROTEINES

Rapport kappa/lambda libres	0,26-1,65	<0,01*
Chaînes légères kappa libres	3,30-19,4 mg/L	25,7*
Chaînes légères lambda libres	5,71-26,3 mg/L	10'300*

Prévention



AKI Stage

High Risk

1

2

3

Discontinue all nephrotoxic agents when possible

Ensure volume status and perfusion pressure

Consider functional hemodynamic monitoring

Monitoring Serum creatinine and urine output

Consider alternatives to radiocontrast procedures

Non-invasive diagnostic workup

Consider invasive diagnostic workup

Check for changes in drug dosing

AKI Stage

High Risk

1

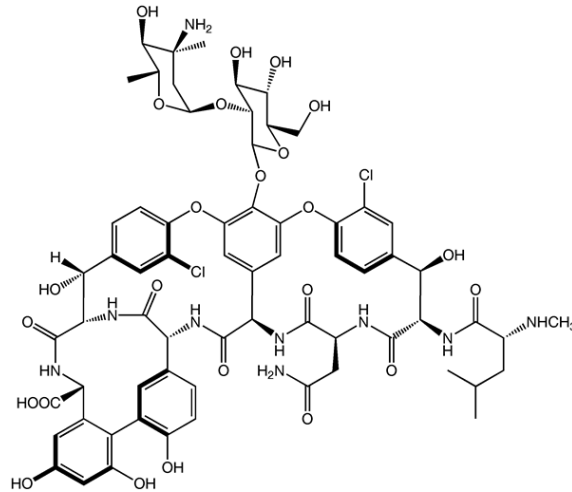
2

3

Discontinue all nephrotoxic agents when possible



AINS



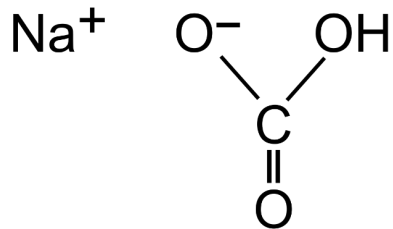
Hydratation avant produit de contraste

- Insuffisance rénale sévère (G4-G5)
- Préparation 1 à 3 ml/Kg/heure NaCl 0.9%



Outcomes after Angiography with Sodium Bicarbonate and Acetylcysteine

S.D. Weisbord, M. Gallagher, H. Jneid, S. Garcia, A. Cass, S.-S. Thwin, T.A. Conner, G.M. Chertow, D.L. Bhatt, K. Shunk, C.R. Parikh, E.O. McFalls, M. Brophy, R. Ferguson, H. Wu, M. Androsenko, J. Myles, J. Kaufman, and P.M. Palevsky, for the PRESERVE Trial Group*



Prophylactic hydration to protect renal function from intravascular iodinated contrast material in patients at high risk of contrast-induced nephropathy (AMACING): a prospective, randomised, phase 3, controlled, open-label, non-inferiority trial

Estelle C Nijssen, Roger J Rennenberg, Patty J Nelemans, Brigitte A Essers, Marga M Janssen, Marja A Vermeeren, Vincent van Ommen, Joachim E Wildberger

48% intra-artérielle
15% intervention

~~CKD 3~~

RCT avec patients IRC G4-G5

The NEW ENGLAND JOURNAL *of* MEDICINE

ORIGINAL ARTICLE

Endovascular Repair of Aortic Aneurysm in Patients Physically Ineligible for Open Repair

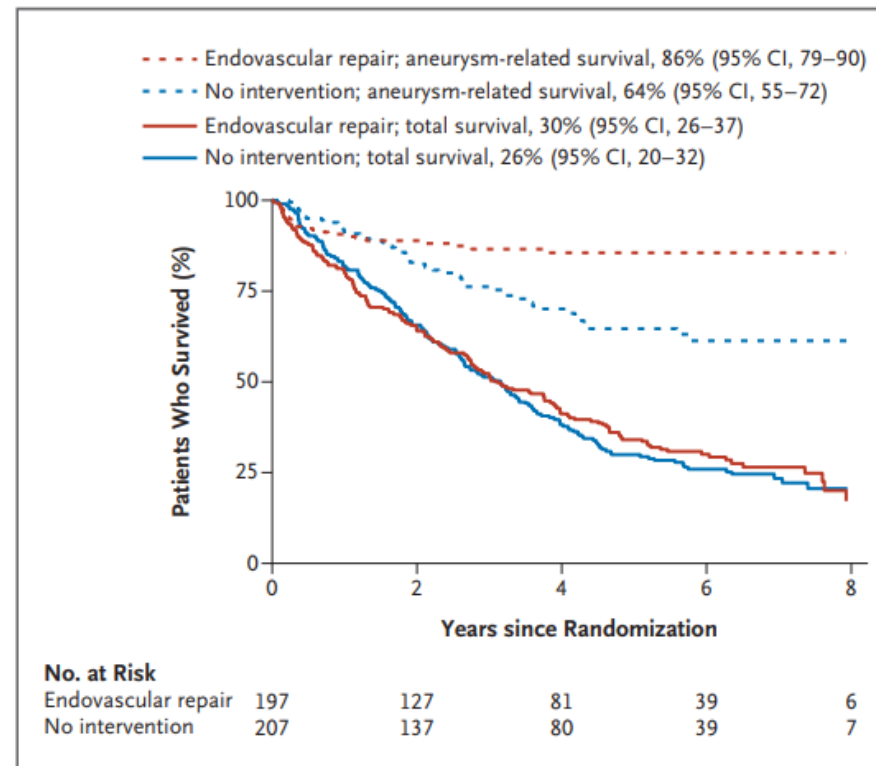
The United Kingdom EVAR Trial Investigators*

Supplementary Appendix Table 1 – Case record form questions used to ascribe patient fitness for open repair and suitability for EVAR Trial 1 or 2	
	No. of patients with positive response in EVAR Trial 2 N=404
CARDIAC STATUS	
1. Has the patient had a myocardial infarction within the last 3 months?	4
2. Has the patient experienced onset of angina within last 3 months?	44
3. Does the patient have unstable angina at night or at rest?	18
If yes to any of questions 1-3, entry unlikely into either trial at this stage	
4. Is there a past history of myocardial infarction?	
5. Is there a history of cardiac revascularisation?	
6. Is there a past history of angina pectoris?	
7. Is there severe heart valve disease?	
8. Is there significant arrhythmia?	
9. Is there uncontrolled congestive cardiac failure?	
If yes to any of questions 4-9, patient may be more suitable for EVAR 2	285
If no to all of questions 4-9, patient may be suitable for EVAR 1	119
RESPIRATORY STATUS	
10. Is Forced Expiration Volume in 1 second (FEV ₁) <1.0L?	
If yes to question 10, patient may be more suitable for EVAR 2	65
If no to question 10, patient may be suitable for EVAR 1	339
RENAL STATUS	
11. Is serum creatinine >200 µmol/L?	
If yes to question 11, patient may be more suitable for EVAR 2	34
If no to question 11, patient may be suitable for EVAR 1	370

< 10%

Table 2. Deaths from Any Cause and from Aneurysm-Related Causes, According to Time since Randomization.

Outcome	Endovascular Repair (N = 197)	No Repair (N = 207)	Hazard Ratio (95% CI)		P Value†
	<i>no./total no. (rate/100 person-yr)</i>		Unadjusted	Adjusted*	
Death from any cause					
All patients	145/197 (21.0)	160/207 (22.1)	0.95 (0.76–1.19)	0.99 (0.78–1.27)	0.97



ORIGINAL ARTICLE

Management of Coronary Disease in Patients with Advanced Kidney Disease

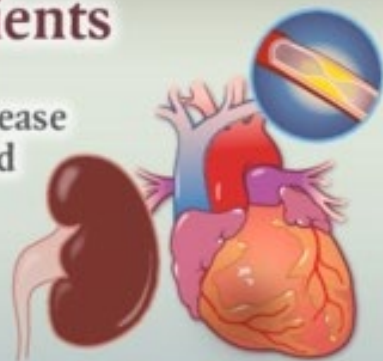
S. Bangalore, D.J. Maron, S.M. O'Brien, J.L. Fleg, E.I. Kretoy, C. Briguori, U. Kaul,
H.R. Reynolds, T. Mazurek, M.S. Sidhu, J.S. Berger, R.O. Mathew, O. Bockeria,
S. Broderick, R. Pracon, C.A. Herzog, Z. Huang, G.W. Stone, W.E. Boden,
J.D. Newman, Z.A. Ali, D.B. Mark, J.A. Spertus, K.P. Alexander, B.R. Chaitman,
G.M. Chertow, and J.S. Hochman, for the ISCHEMIA-CKD Research Group*

Managing Coronary Disease in Advanced Kidney Disease

OPEN-LABEL RANDOMIZED, CONTROLLED TRIAL

777 Patients

with stable
coronary disease
and advanced
CKD



Invasive Strategy

+ Medical
therapy



(N=388)

Conservative Care

Medical
therapy



(N=389)

Death or nonfatal MI

123

Adjusted HR 1.01; 95% CI, 0.79–1.29; P=0.95

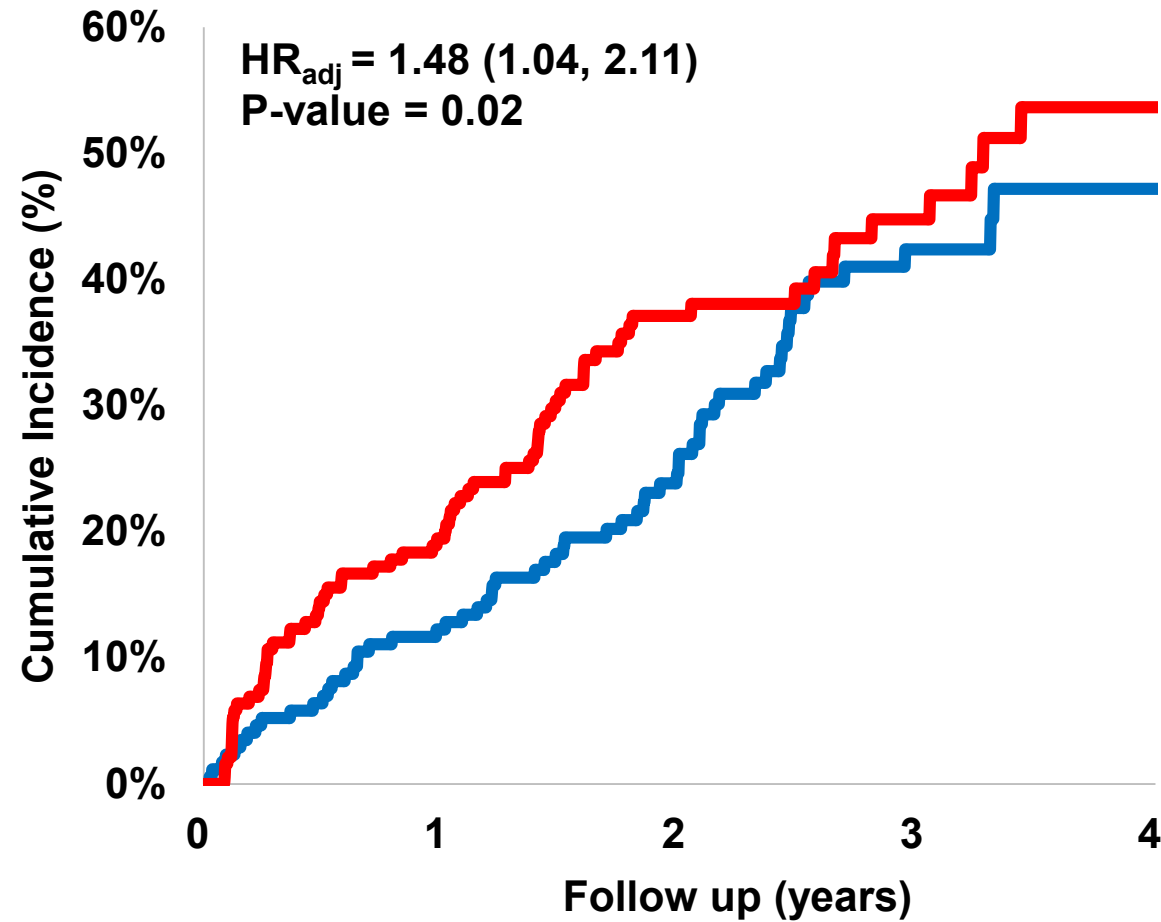
129

**Angina-related
health status**

**No difference in Seattle Angina
Questionnaire summary score**

**Invasive treatment did not reduce the rate of death or nonfatal MI
or improve angina-related health status**

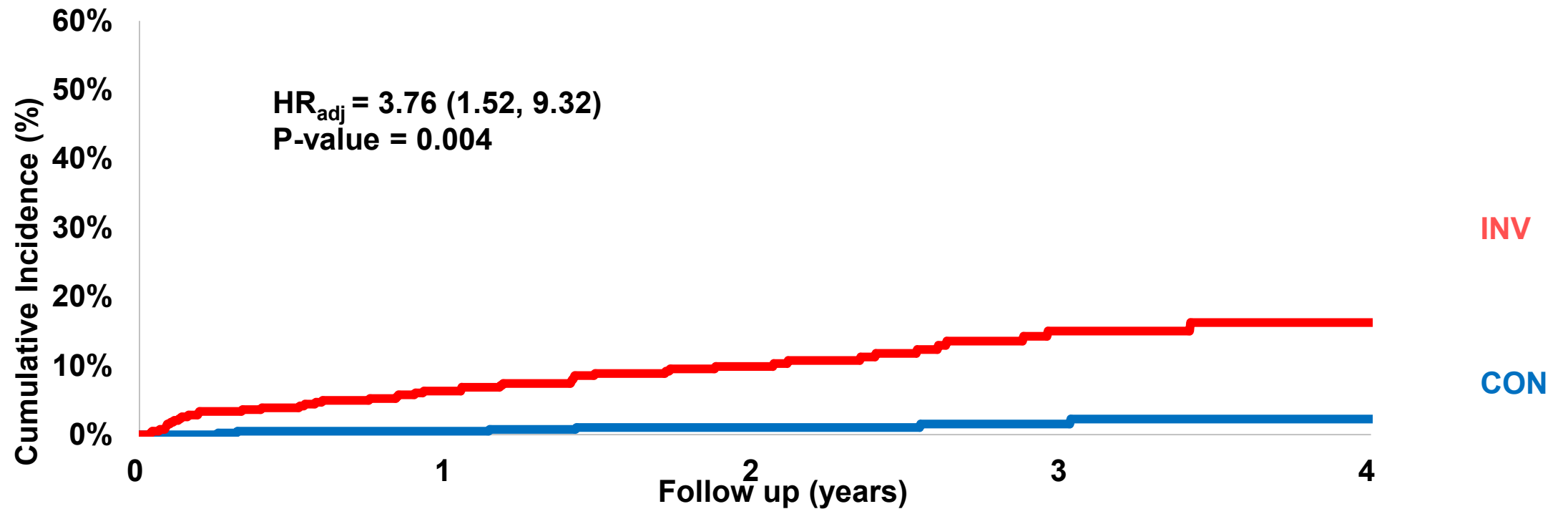
Safety End Points: *Death or New Dialysis* *



* In those not on dialysis at baseline

Secondary End Point

Stroke



Conclusions

- L'insuffisance rénale aiguë postopératoire suite à des revascularisations est fréquente et associée à la morbidité et la mortalité
- La cause la plus fréquente est la Nécrose Tubulaire Aigue (NTA)
- Des mesures préventives simples sont justifiées avant toute revascularisation chez les patients avec une IRC sévère
- Dans de nombreux cas il est raisonnable de renoncer à une stratégie invasive chez les patient avec une IRC sévère ou dialysés