LEADING EUROPEAN NEPHROLOGY

Deutsche Gesellschaft für Nephrologie

58TH ERA-EDTA CONGRESS FULLY VIRTUAL JUNE 5-8, 2021

2021 pearls of CKJ

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Statement about the financial Interest (DOI - Disclosure of Interest)

Do you have, or have you had during the past 2 years, received any personal fees from an entity?	Yes	Immunodiagnostic systems, ARK Biosciences, Sanofi, Bayer, Amgen, Fresenius Medical Care, AstraZeneca.
Do you have, or have you had during the past 2 years, received any grants from an entity?	Yes	Fondation Léon Fredericq
Do you have, or have you had during the past 2 years, received any non-financial support from an entity?	No	
Are you a member (current) of any kind of committee, board, WG, etc. of another scientific association with similar aims as ERA-EDTA?	Yes	Board of the SFNDT (French Speaking society of Nephrology Dialysis Transplantation)

P Delanaye has consultancy agreement with Immunodiagnostic systems and ARK Biosciences, has received lecture fees from Sanofi, Bayer, Amgen, Fresenius Medical Care, and participated to advisory boards for AstraZeneca.

Pearls in 2020…

COVID-19 in CKJ: AKI

Clinical Kidney Journal

Clinical Kidney Journal, 2020, vol. 13, no. 4, 550–563

doi: 10.1093/ckj/sfaa160
Original Article

ORIGINAL ARTICLE

Acute kidney injury and kidney replacement therapy in COVID-19: a systematic review and meta-analysis

Edouard L. Fu [1], Roemer J. Janse[1], Ype de Jong [1,2], Vera H.W. van der Endt[1], Jet Milders[1], Esmee M. van der Willik [1], Esther N.M. de Rooij[1,2], Olaf M. Dekkers[1,2,3], Joris I. Rotmans[2] and Merel van Diepen[1]

Context

- AKI in hospitalized COVID-19 patients between 0.5 and 40%
- Meta-analysis
- 142 studies and 49,048 hospitalized patients and 5,152 AKI events

- Seven studies with proteinuria and hematuria
- Proteinuria from 31.2 to 87%
- Hematuria: from 26.7 to 51%

- Pooled incidence of AKI 28.6% [95% CI: 19.8–39.5] in USA and Europe (20 studies, n=8,061) I^2=97%
- 5.5% (95% CI 4.1–7.4) in Asia (62 studies, n=19,378) I^2=95%
- Pooled incidence of KRT 7.7% (95% CI 5.1–11.4; 18 studies) in USA and Europe I^2=92%
- 2.2% (95% CI 1.5–3.3; 52 studies) in China I^2=89%
- Incidence of KRT in ICU was 20.6% (95% CI 15.7–26.7; 38 studies, n=4,330) I^2=97%
- Risk factors (Meta-regression): age, male sex, cardiovascular disease, diabetes mellitus, hypertension and chronic kidney disease
- AKI was associated with an increased risk of mortality (23 studies), with a pooled risk ratio of 4.6 (95% CI 3.3–6.5) I^2=90%

COVID-19 in CKJ: AKI

Clinical Kidney Journal, 2020, vol. 13, no. 3, 340–346

doi: 10.1093/ckj/sfaa083
Advance Access Publication Date: 9 May 2020
Original Article

ORIGINAL ARTICLE

Kidney manifestations of mild, moderate and severe coronavirus disease 2019: a retrospective cohort study

Daqing Hong [1,*], Lin Long[2,*], Amanda Y. Wang[3,4,5,*], Yu Lei[6,*], Yun Tang[1], Jia Wei Zhao[7], Xiaofei Song[3,4,5], Yanan He[3,4,5], Ergang Wen[1], Ling Zheng[1], Guisen Li[1] and Li Wang[1]

Context

- AKI, proteinuria and hematuria
- Retrospective data from China (Sichuan), two main hospitals
- January 16th to March 13th 2020
- N=168 (=31% of all patients hospitalized in the province)
- 79,7% with mild to moderate disease

- On hospital admission, dipstick proteinuria and hematuria were noted in 18.4% and 17.4% of 103 patients (only one with AKI)

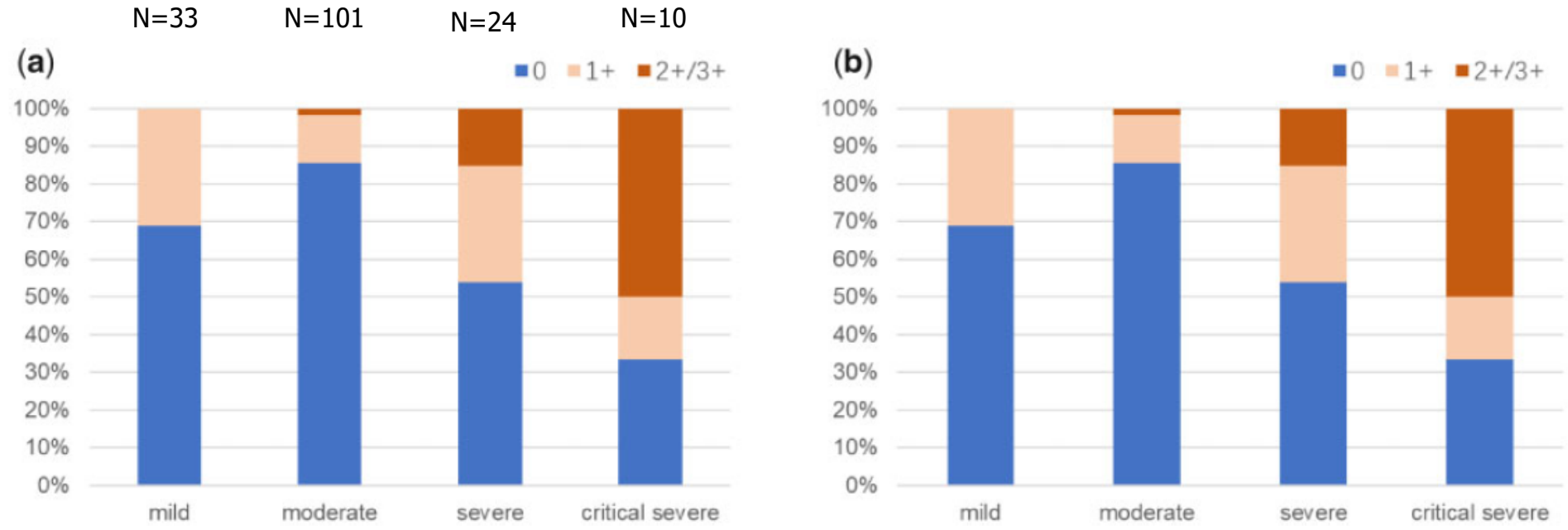

FIGURE 1: Distribution of urine protein and dipstick hematuria in patients according to the severity of COVID-19. **(a)** Proteinuria; **(b)** dipstick hematuria.

COVID-19 in CKJ: AKI

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CLINICAL KIDNEY JOURNAL

ckj OXFORD era edta

Clinical Kidney Journal, 2020, vol. 13, no. 3, 354–361

doi: 10.1093/ckj/sfaa099
Advance Access Publication Date: 6 June 2020
Original Article

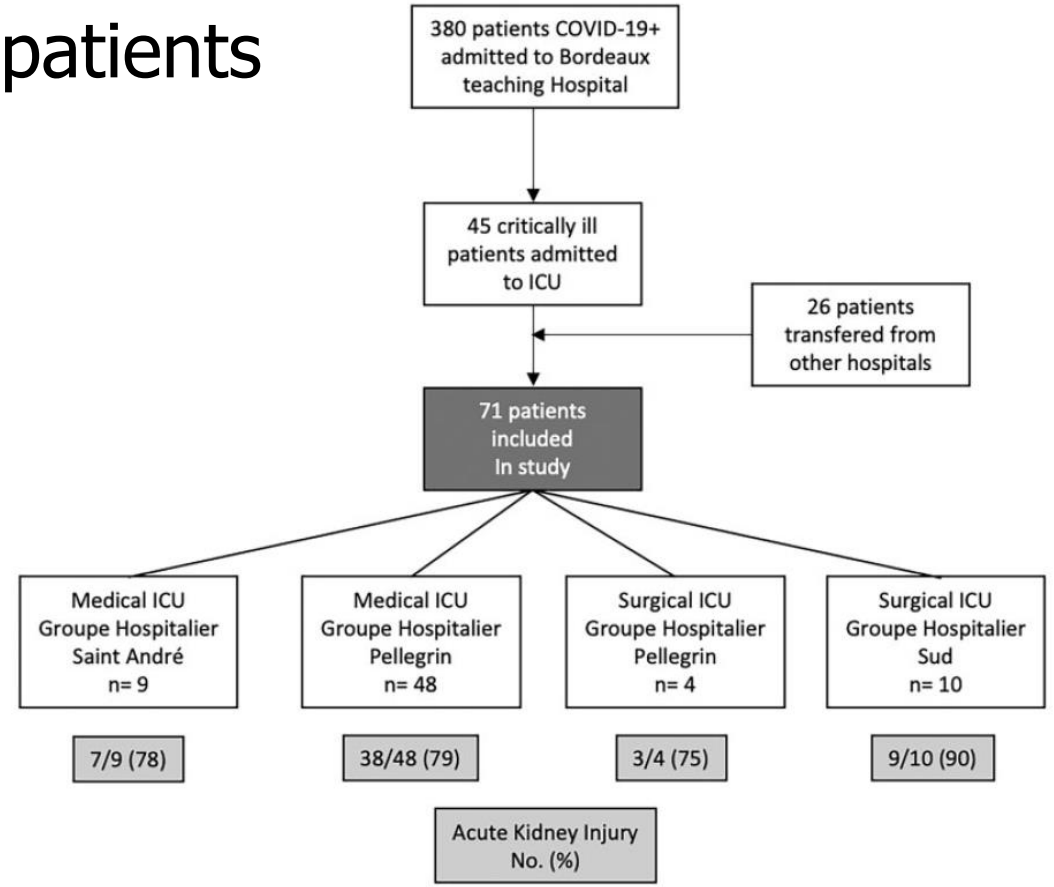
ORIGINAL ARTICLE

Characterization of acute kidney injury in critically ill patients with severe coronavirus disease 2019

Sébastien Rubin [1,6,*], Arthur Orieux[2], Renaud Prevel[2], Antoine Garric[1], Marie-Lise Bats[3,6], Sandrine Dabernat[3], Fabrice Camou[2], Olivier Guisset[2], Nahema Issa[2], Gaelle Mourissoux[2], Antoine Dewitte[4], Olivier Joannes-Boyau[4], Catherine Fleureau[4], Hadrien Rozé[4], Cédric Carrié[5], Laurent Petit[5], Benjamin Clouzeau[2], Charline Sazio[2], Hoang-Nam Bui[2], Odile Pillet[2], Claire Rigothier[1], Frederic Vargas[2], Christian Combe [1], Didier Gruson[2] and Alexandre Boyer[2]

Context

- AKI, proteinuria, hematuria in ICU patients
- Single cohort
- March 3th to April 21th 2020
- N=71



- AKI at admission in ICU in 8/71 (11%) patients
- AKI developed in 57/71 (80%) of patients:
  - Stage 1: 35%
  - Stage 2: 35%
  - Stage 3: 30%
  - KRT: 18% (10/57) (14% of all ICU hospitalization)
- Persistent (>7 days) AKI in 51/55 (93%)
- Patients with persistent AKI developed a median (IQR) urine protein/creatinine of 82 (54–140) (mg/mmol)
- Predominant tubulointerstitial profile
- Haematuria: 35/51 (69%) but all had urine catheter
- Only two (4%) patients had glycosuria

COVID-19 in CKJ: AKI

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CLINICAL KIDNEY JOURNAL

ckj OXFORD era edta LEADING EUROPEAN NEPHROLOGY

Clinical Kidney Journal, 2020, vol. 13, no. 3, 362–370

doi: 10.1093/ckj/sfaa109
Advance Access Publication Date: 8 June 2020
Original Article

ORIGINAL ARTICLE

Coronavirus disease 2019: acute Fanconi syndrome precedes acute kidney injury

Raphaël Kormann [1], Audrey Jacquot[2], Asma Alla[1,*], Alice Corbel[1,*], Matthieu Koszutski[2], Paul Voirin[1,3], Matthieu Garcia Parrilla[4], Sybille Bevilacqua[3], Evelyne Schvoerer[5], Jean-Louis Gueant[6], Farès Namour[4,6], Bruno Levy[2,7], Luc Frimat[1,8] and Abderrahim Oussalah[4,6]

Context

- Proteinuria in COVID-19, retrospective, single center
- N=42 (n=28 in ICU), 20th March to 29th March 2020
- markers of proximal tubulopathy (at day 5.4±4,1) : + if two abnormalities

(i) renal phosphate leak: ratio TmPi/GFR <0.77 mmol/L

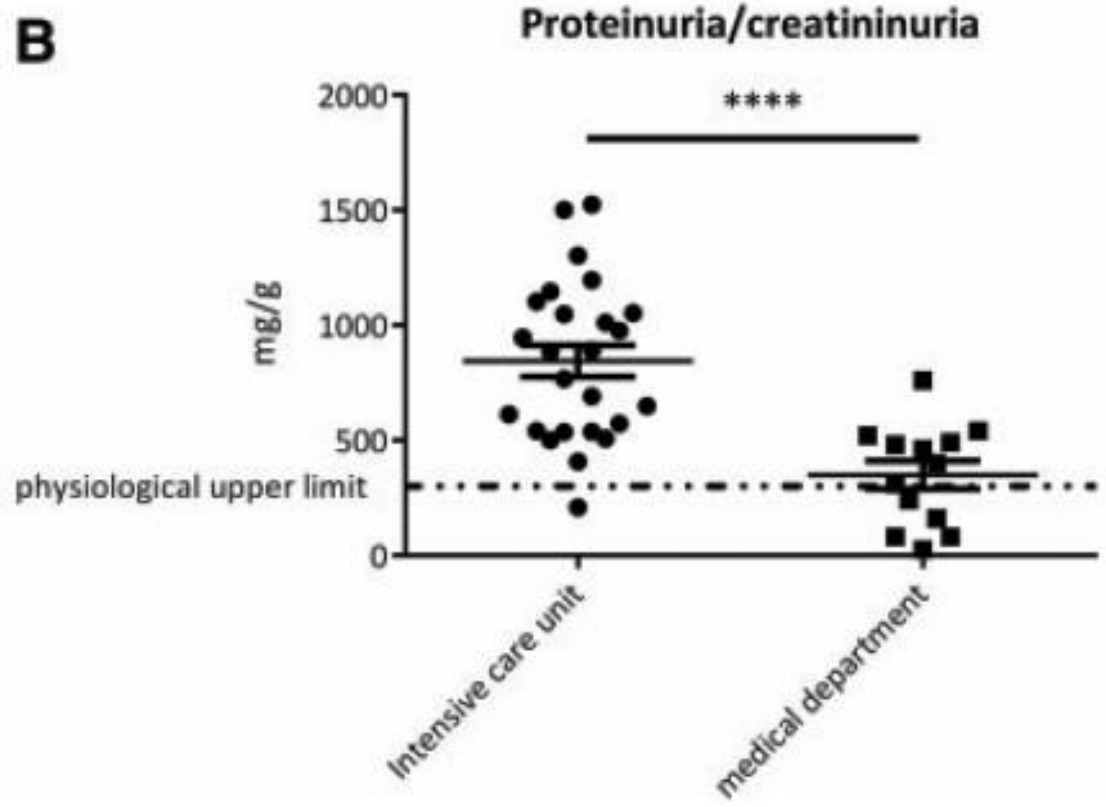
(ii) A normoglycaemic glycosuria (>0.15 g/L and glycaemia <1.80 g/L)

(iii) Hyperuricosuria: serum uric acid (SUA) 220 mmol/L in men and <184 mmol/L in women, and a Fe of urate >10%

(iv) Urinary protein/creatinine ratio (proteinuria) >300 mg/g

Table 3. Focus

Variables				= 14)	P-value[a]
Diagnosis of rer					0.28
Diagnosis of pr					0.0095
Diagnosis of rer					0.51
(TmPi/GFR <					
Serum phospha					0.98
Hypophosphata					0.58
Normophospha					0.51
Hyperphosphat					0.98
RTP					0.28
TmPi/GFR, mm					0.11
Intraveinous ph					0.0017
Diagnosis of hy					0.31
Hypouricaemia					0.52
SUA, μmol/L					0.48
Fe uric acid valu					0.67
Diagnosis of no					0.27
Glycosuria >0.1					0.017
Glycaemia >1.8					0.037
Glycosuria value in normoglycaemic patient (<1.80 g/L), g/L	0.09 (0.04–0.27)[g]	0.15 (0.05–0.45)[g]	0.23 and 18.80 g/L[g]		0.21



COVID-19 in CKJ: haemodialysis

Clinical Kidney Journal, 2020, vol. 13, no. 3, 328–333

doi: 10.1093/ckj/sfaa086
Advance Access Publication Date: 12 June 2020
Original Article

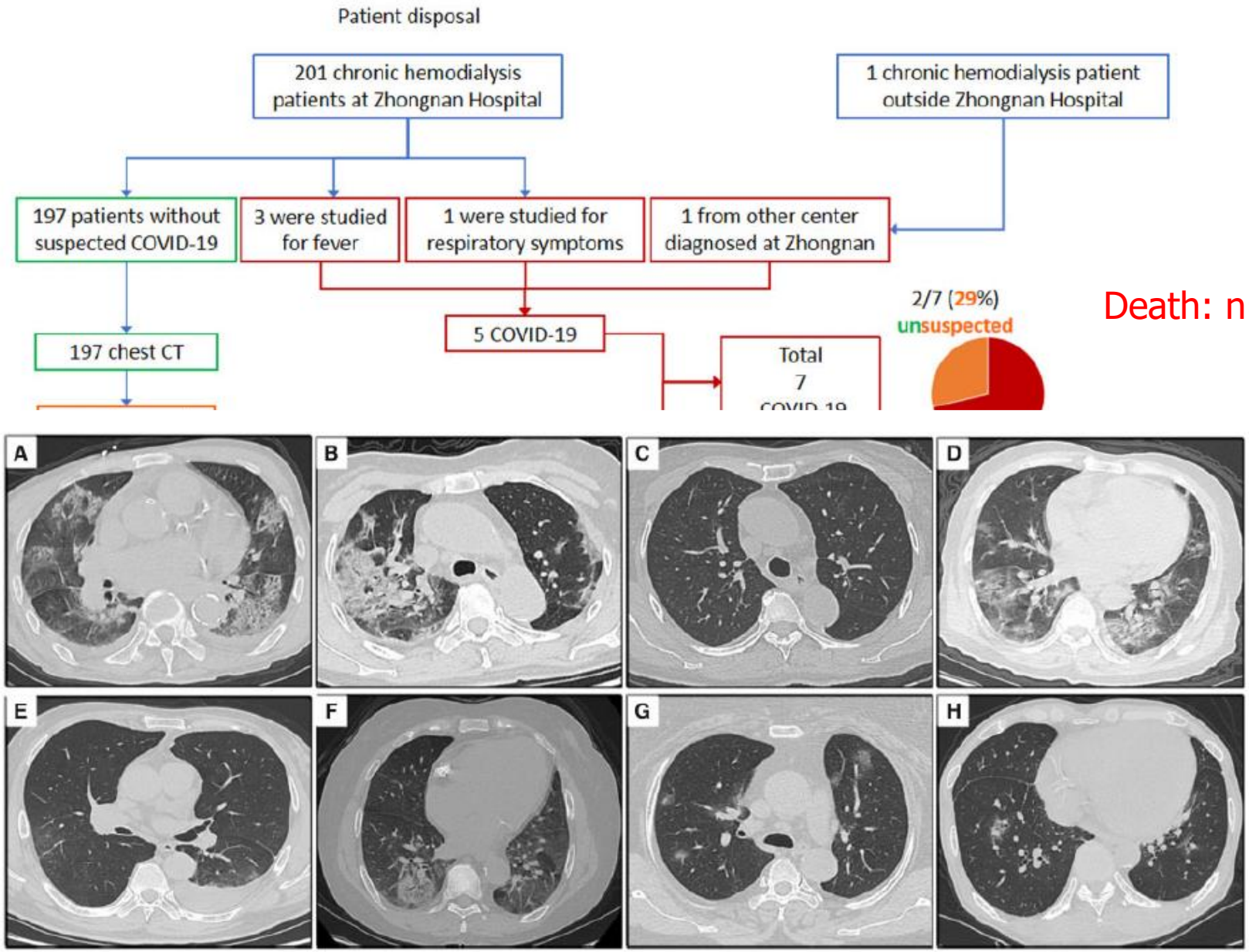
ORIGINAL ARTICLE

Clinical outcomes of hemodialysis patients infected with severe acute respiratory syndrome coronavirus 2 and impact of proactive chest computed tomography scans

Rui Wang[1,*], Hong He[1,*], Cong Liao[2,*], Hongtao Hu[3], Chun Hu[1], Juan Zhang[1], Ping Gao[1], Xiaoyan Wu[1], Zhenshun Cheng[4], Meiyan Liao[5] and Hua Shui[1]

Context

- Retrospective, single-center case series (Hospital of Wuhan University)
- from January 13th to April 7th 2020
- Proactive search of potential cases by chest computed tomography (CT) scans



Death: n=3/7

FIGURE 3: Chest CT scans (transverse plane) of seven patients with COVID-19. (A) Patient 1: bilateral multiple consolidations and ground-glass opacities. (B) Patient 2: patchy consolidation in the right lung and bilateral ground-glass opacities. (C) Patient 2: bilateral lesions absorbed after 31 days. (D) Patient 3: bilateral multiple ground-glass opacities and a few consolidation opacities in the left lower lung lobe. (E) Patient 4: multiple ground-glass opacities bilaterally and left pleural effusion. (F) Patient 5: round mixed ground-glass opacity in the subpleural area of right lower lung lobe. (G) Patient 6: bilateral patchy ground-glass opacities. (H) Patient 7: bilateral patchy ground-glass opacities.

COVID-19 in CKJ: haemodialysis

58TH ERA-EDTA CONGRESS FULLY VIRTUAL JUNE 5-8, 2021

CLINICAL KIDNEY JOURNAL

Clinical Kidney Journal, 2020, vol. 13, no. 3, 334–339

doi: 10.1093/ckj/sfaa084
Advance Access Publication Date: 22 June 2020
Original Article

ORIGINAL ARTICLE

SARS-CoV-2 infection in dialysis patients in northern Italy: a single-centre experience

Francesco Fontana [1], Francesco Giaroni[2], Monica Frisina[2], Gaetano Alfano[1,2], Giacomo Mori[1], Leonardo Lucchi[1], Riccardo Magistroni[1,2] and Gianni Cappelli[1,2]

Context

- Retrospective, single-center case series
- Only symptomatic dialysis patients were tested (n=37/306)
- From February 27th to April 7th 2020

Table 1. Clinical characteristics of the patients at the time of diagnosis

Characteristics	Patients (N = 15)
Age (years), mean (SD)	75.96 (11.09)
Sex, *n* (%)	
Male	13 (87)
Female	2 (13)
Body mass index, mean (SD)	25.18 (4)
Coexisting disorder, *n* (%)	15 (100)
Diabetes mellitus	8 (53)
Arterial hypertension	14 (93)
Cardiovascular disease	7 (47)
Obesity	4 (27)
Others	14 (93)
Symptoms, *n* (%)	
Fever	10 (67)
Cough	11 (73)
Dyspnoea	5 (33)
Asthenia	7 (47)
Myalgia	3 (20)
Gastrointestinal symptoms	0 (0)
Vital signs at first evaluation, mean (SD)	
Temperature >37.5°C	4 (27)
Heart rate >100 bpm	0 (0)
Respiratory rate >20/min	4 (27)
Mean arterial pressure (mmHg)	91.84 (13)

Table 2. Laboratory and radiological findings at presentation and evolution of laboratory parameters during follow-up

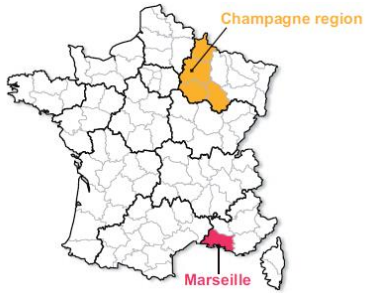
Laboratory and radiological findings	At presentation	During follow-up
Parameter	Patients (*n* = 15)	Patients (*n* = 15)
pO_2 (mmHg)		
Median (IQR)	72.75 (64.25–84.83)	59 (50.75–76.5)[a]
<60 mmHg, *n* (%)	0 (0)	6 (40)
pO_2:FIO_2		
Median (IQR)	337.5 (293.5–371.5)	262 (85–352.5)[a]
<200, *n* (%)	0 (0)	5 (33.33)
White blood cell count, *n*/μL		
Median (IQR)	5570 (4800–6930)	5570 (4490–6630)[b]
Distribution, *n* (%)		
>10.000/μL	1 (6.67)	
<4000/μL	1 (6.67)	1 (6.67)[b]
Lymphocyte count, *n*/μL		
Median (IQR)	870 (565–1115)	610 (530–1020)[b]
<1500/μL, *n* (%)	11 (73.33)	11 (73.33)[b]
Lactate dehydrogenase (U/L), median (IQR)	480 (408–498)	540 (426–907)[c]
D-dimer (ng/L), median (IQR)	1330 (960–3830)	1620 (960–3980)[c]
Platelets (*n*/μL), median (IQR)	170 (110–230)	155 (109–230)[b]
C-reactive protein (mg/dL), median (IQR)	2.8 (1.7–6.1)	12.4 (4.8–25.4)[c]
Procalcitonin (ng/mL), median (IQR)	0.95 (0.625–2.125)	
IL-6 (pg/mL), median (IQR)	167.4 (106.3–332.8)	269.8 (148.2–1843)[c]
Chest X-ray, *n* (%)	12 (80)	
No relevant alterations	2 (13.33)	
Interstitial infiltrates	8 (53.33)	
Lobar of multifocal consolidation	6 (40)	
Pleural effusion	3 (20)	
Chest CT scan, *n* (%)	1 (6.67)	

Table 3. Comparison between patients who died and survived

Parameter	Patients who died ($n = 6$)	Survivors ($n = 9$)	P-value
Age (years), mean (SD)	75.46 (10.04)	76.3 (12.32)	0.89
Dialysis vintage (years)	2.89 (0.14–5.06)	5.71 (1.36–9)	0.22
Sex (% of males)	83.33	88.89	1
Body mass index, mean (SD)	25.55 (4.41)	24.98 (4.08)	0.81
Diabetes (%)	83.33	33.33	0.12
Obesity (%)	33.33	22.22	1
Lowest pO_2 (mmHg)	53 (47.95–104)	60 (54.9–72)	1
Lowest pO_2:FIO_2	100 (50–377.5)	274 (146–300)	0.5
White blood cell count nadir (*n*/uL)	5655 (5153–8497)	4800 (4375–6305)	0.18
Lymphocyte count nadir (*n*/uL)	540 (465–2135)	705 (545–995)	0.75
Lactate dehydrogenase zenith (U/L)	548 (444–1383)	532 (421–870)	0.63
D-dimer zenith (ng/L)	1510 (1330–1860)	2445 (892–3965)	1
Platelets nadir (*n*/uL)	141 (105–247)	166 (107–220)	0.9
C-reactive protein zenith (mg/dL)	26.15 (16.93–34.38)	7.5 (4.35–13.15)	0.02
IL-6 zenith (pg/mL)	470 (355.8–2405)	152.8 (107.9–1241)	0.14
Specific treatments (%)			
Hydroxychloroquine	66.66	88.88	0.52
Azithromycin	33.33	44.44	1
Darunavir/cobicistat	16.66	11.11	1
Heparin	44.44	33.33	1
Tocilizumab	0	11.11	1

Values are expressed as median (IQR) unless stated otherwise.

COVID-19 in CKJ: haemodialysis



58TH ERA-EDTA CONGRESS FULLY VIRTUAL JUNE 5-8, 2021

Clinical Kidney Journal, 2020, 878–888

doi: 10.1093/ckj/sfaa199
Original Article

ORIGINAL ARTICLE

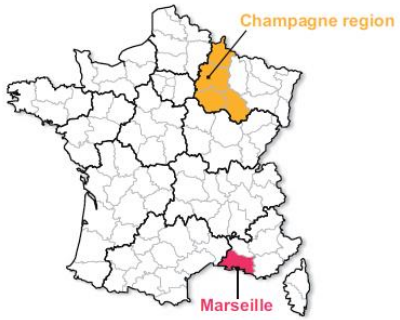
Risk factors for severity of COVID-19 in chronic dialysis patients from a multicentre French cohort

Guillaume Lano[1,2,*], Antoine Braconnier[3,*], Stanislas Bataille [2,4], Guilhem Cavaille[5], Julie Moussi-Frances[5], Bertrand Gondouin[1,6], Pascal Bindi[7], Magued Nakhla[8], Janette Mansour[9], Pascale Halin[10], Bénédicte Levy[11], Eric Canivet[12], Khaled Gaha[3], Isabelle Kazes[3], Natacha Noel[3], Alain Wynckel[3], Alexandre Debrumetz[3], Noemie Jourde-Chiche [1,2], Valerie Moal[1], Romain Vial[1], Violaine Scarfoglière[1], Mickael Bobot[1,2], Marion Gully[1], Tristan Legris[1], Marion Pelletier[1], Marion Sallee[1,2], Stephane Burtey [1,2], Philippe Brunet[1,2], Thomas Robert[1] and Philippe Rieu[3,13]

CLINICAL KIDNEY JOURNAL

Context

From March 5th to May 8th 2020



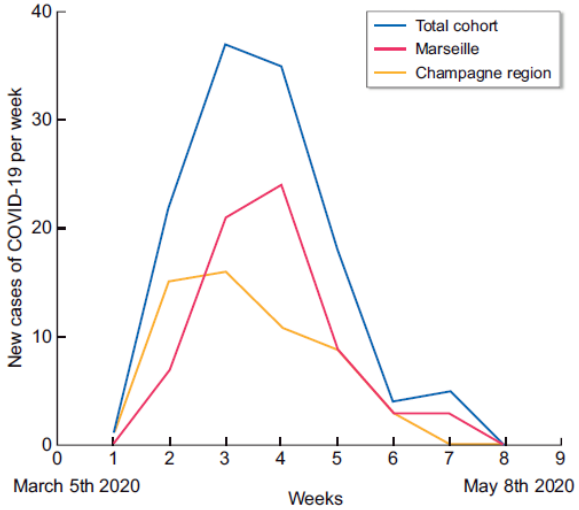


FIGURE 2: Number of new cases of COVID-19 per week in dialysis patients in Marseille and Champagne region.

Clinical Kidney Journal

Risk factors for severity of COVID-19 in chronic dialysis patients from a multicentre French cohort

Methods

Setting: 11 dialysis centres in France

Cohort: dialysis patients with COVID-19

Outcomes: disease severity – ICU admission or death

Results

2336 patients

5.5% with COVID-19
N=122

28% died

37% ICU admission or died

Oxygen and reduced lymphocytes are independent predictors of disease severity and mortality

ARB has protective effect on mortality

AZT/ HCQ not associated with better outcomes

Conclusion: COVID-19 is a severe disease with poor prognosis in patients with ESRD. Treatment with ARBs seems to be protective for critical evolution and mortality. There is no evidence of clinical benefit with the combination of AZT/HCQ.

Lano, G. *et al.*
Clinical Kidney Journal (2020)
@CKJsocial

COVID-19 and CKJ: haemodialysis

CLINICAL KIDNEY JOURNAL

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Clinical Kidney Journal, 2020, vol. 13, no. 4, 542–549

doi: 10.1093/ckj/sfaa119
Advance Access Publication Date: 13 July 2020
Original Article

ORIGINAL ARTICLE

The keys to control a COVID-19 outbreak in a haemodialysis unit

Abraham Rincón [1], Francesc Moreso[1], Ana López-Herradón[1], M. Amparo Fernández-Robres[2], Ignacio Cidraque[3], Jordi Nin[2], Orleans Méndez[2], Marisol López[2], Carlota Pájaro[3], Àngels Satorra[2], Stefano Stuard[4] and Rosa Ramos[1]

Context

- Impact of systematic screening
- From March 20th to 28th 2020
- Single center

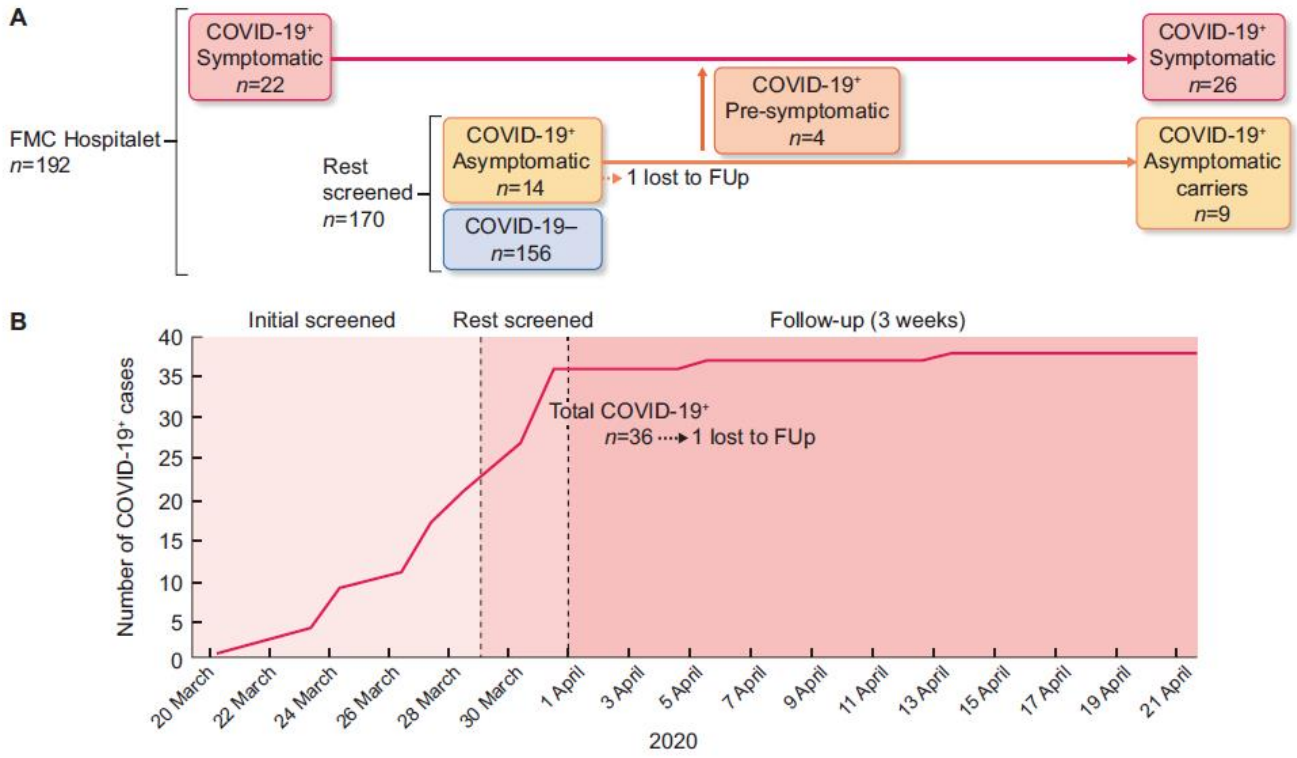

Table 3. Frequencies of symptoms attending to its presence in COVID-19-positive patients

Variables	Patients	%
Asymptomatic	9/35	25.7
Symptomatic	26/35	74.3
Hospitalization	23/26	88.5
Pneumonia	21/26	80.8
Fever ≥37.5°C	19/26	73.1
Cough	17/26	65.4
General malaise	13/26	50.0
Dyspnea	11/26	42.3
Feverishness	5/26	19.2
Gastrointestinal discomfort	3/26	11.5
ICU requirement	1/26	3.8
Exitus	7/26	26.9

Asymptomatic and symptomatic percentages were calculated referred to total COVID-19-positive population. Each symptom percentage represents its frequency referred to the total of COVID-19-positive symptomatic population. ICU, intensive care unit.

COVID-19 and CKJ: Case Reports and Letters

58TH ERA-EDTA CONGRESS FULLY VIRTUAL JUNE 5-8, 2021

Clinical Kidney Journal

Clinical Kidney Journal, 2020, vol. 13, no. 3, 347–353
doi: 10.1093/ckj/sfaa088
Advance Access Publication Date: 22 May 2020
Original Article

ORIGINAL ARTICLE

Indirect effects of severe acute respiratory syndrome coronavirus 2 on the kidney in coronavirus disease patients

Aymeric Couturier[1,2,*], Sophie Ferlicot[3,*], Kévin Chevalier[4,*], Matthieu Guillet[5,6], Marie Essig[1,2,6], Stéphane Jauréguiberry[2,4], Rocco Collarino[4], Mathilde Dargelos[1], Alice Michaut[3], Guillaume Geri[2,6,7], Anne-Marie Roque-Afonso[6,8], Mohamad Zaidan[5,6,*] and Ziad A. Massy[1,2,6,*]

Clinical Kidney Journal

Clinical Kidney Journal, 2020, vol. 13, no. 4, 713
doi: 10.1093/ckj/sfaa141
Advance Access Publication Date: 5 August 2020
Letter to the Editor

LETTER TO THE EDITOR

Renal artery thrombosis induced by COVID-19

Carole Philipponnet [1], Julien Aniort[1], Pascal Chabrot[2], Bertrand Souweine[3] and Anne-Elisabeth Heng[1]

[1]Nephrology, Dialysis and Transplantation Department, University Hospital, Clermont Ferrand, France, [2]Department of Vascular Radiology, University Hospital, Clermont Ferrand, France and [3]Intensive Medicine and Reanimation, University Hospital, Clermont Ferrand, France

Clinical Kidney Journal

Clinical Kidney Journal, 2020, vol. 13, no. 3, 461–462
doi: 10.1093/ckj/sfaa080
Advance Access Publication Date: 17 May 2020
Exceptional Case

EXCEPTIONAL CASE

The syndrome of inappropriate antidiuresis in COVID-19 pneumonia: report of two cases

Svenja Ravioli, Norbert Niebuhr, Chantal Ruchti, Emanuel Pluess, Thomas Stoeckli and Gregor Lindner

Department of Internal and Emergency Medicine, Buergerspital Solothurn, Solothurn, Switzerland

Clinical Kidney Journal

Clinical Kidney Journal, 2020, vol. 13, no. 3, 477–479
doi: 10.1093/ckj/sfaa095
Advance Access Publication Date: 12 June 2020
Letter to the Editor

LETTER TO THE EDITOR

Targeting complement in severe coronavirus disease 2019 to address microthrombosis

Francisco Valga[1], Nicanor Vega- Díaz[1], Manuel Macia[2], Tania Monzón[3] and Jose C. Rodriguez-Perez[1]

[1]Department of Nephrology, Hospital Universitario de Gran Canaria Dr Negrín, Plaza Barranco de la Ballena S/N, Las Palmas de Gran Canaria, Spain, [2]Department of Nephrology, Hospital Nuestra Señora de Candelaria, Santa Cruz de Tenerife, Tenerife, Spain and [3]Department of Hemodialysis, Avericum S.L., Las Palmas de Gran Canaria, Las Palmas, Spain

Clinical Kidney Journal

Clinical Kidney Journal, 2020, vol. 13, no. 3, 473–474
doi: 10.1093/ckj/sfaa050
Advance Access Publication Date: 20 March 2020
Letter to the Editor

LETTER TO THE EDITOR

ERA-EDTA sharing Milan experience on coronavirus management in dialysis centres

Mario Cozzolino on behalf of the ERA-EDTA Council

Renal Unit, San Paolo Hospital and San Carlo Hospital, ASST Santi Paolo e Carlo, Department of Health Sciences, University of Milan, Milan, Italy

Clinical Kidney Journal

Clinical Kidney Journal, 2020, vol. 13, no. 5, 739–741
doi: 10.1093/ckj/sfaa166
Advance Access Publication Date: 27 September 2020
Editorial Comment

EDITORIAL COMMENT

Eculizumab, SARS-CoV-2 and atypical hemolytic uremic syndrome

Hernán Trimarchi , Raquel Gianserra, Mauro Lampo, Matias Monkowski and Jimena Lodolo

Nephrology Service, Hospital Británico de Buenos Aires, Buenos Aires, Argentina

COVID-19 and CKJ: Review

CLINICAL KIDNEY JOURNAL

Clinical Kidney Journal, 2020, vol. 13, no. 3, 297–306

doi: 10.1093/ckj/sfaa104
CKJ Review

CKJ REVIEW

Coronavirus disease 2019 in chronic kidney disease

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COVID-19 and CKJ: Review

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CKJ Review

CKJ REVIEW

A brand-new cardiorenal syndrome in the COVID-19 setting

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Frailty

CLINICAL KIDNEY JOURNAL

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Clinical Kidney Journal, 2020, vol. 13, no. 1, 85–94

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Original Article

ORIGINAL ARTICLE

Frailty is independently associated with worse health-related quality of life in chronic kidney disease: a secondary analysis of the Frailty Assessment in Chronic Kidney Disease study

Andrew C. Nixon [1,2,3], Theodoros M. Bampouras[4,5], Neil Pendleton[6], Sandip Mitra[7,8], Mark E. Brady[1] and Ajay P. Dhaygude[1]

Context

- How frailty affects health-related quality of life (HRQOL) of CKD patients?
- N=90 G4-5D (5D, n=30), cross-sectional
- Frailty= unintentional weight loss (>5% body weight over the last 12 months)
  weakness (handgrip strength)
  slowness (walking speed)
  physical activity (Minnesotta Leisure Time Questionnaire)
  self-perceived exhaustion (two questions)
- HRQOL = RAND 36-Item Health Survey Version 1.0 (SF-36)

SF-36

Scale	SF-36 Item
Physical Functioning (PF)	
	Vigorous activities
	Walking more than a kilometer
	Climbing several flights of stairs
	Bending, kneeling, stooping
	Lifting or carrying groceries
	Moderate activities
	Walking more than 100 m
	Climbing one flight of stairs
	Walking 100 m
	Bathing or dressing
Role-Physical (RP)	
	Accomplished less than would like
	Difficulty performing work/activities
	Cut down time spent on work
	Limited in kind of work/activities
Bodily Pain (BP)	
	Intensity of bodily pain
	Extent pain interfered with work
General Health (GH)	
	Rating of general health
	My health is excellent
	I seem as healthy as anyone I know
	I seem to get sick easier than others
	I expect my health to get worse
Vitality (VT)	
	Have a lot of energy
	Full of life
	Feel worn out
	Feel tired
Social Functioning (SF)	
	Extent health problems interfered
	Frequency health problems interfered
Role-Emotional (RE)	
	Accomplished less than would like
	Cut down time spent on work
	Work not done as carefully as usual
Mental Health (MH)	
	Felt calm and peaceful
	Been a happy person
	Been a very nervous person
	Felt down hearted and blue
	Felt down in the dumps

Frailty

21%

Table 1. Participant baseline demographic and clinical characteristics data

Characteristics	Overall ($n=90$)	Non-frail ($n=71$)	Frail ($n=19$)
Age (years)	69 ± 13	68 ± 13	73 ± 11
Female, *n* (%)	45 (50)	30 (42)	15 (79)
BMI (kg/m^2)	29 ± 6	29 ± 6	28 ± 6
CKD Stage			
CKD G4-5, *n* (%)	60 (67)	51 (72)	9 (47)
CKD G5D, *n* (%)	30 (33)	20 (28)	10 (53)
CCI, median (IQR)	3 (2)	3 (2)	4 (4)
Diabetes mellitus, *n* (%)	24 (27)	16 (23)	8 (42)
Karnofsky score, median (IQR)	70 (30)	80 (20)	60 (20)
Medications	9 ± 4	8 ± 3	11 ± 5
Current or ex-smoker, *n* (%)	49 (54)	40 (56)	9 (47)
MMSE score ≤27[a], *n* (%)	18 (20)	13 (19)	5 (29)
Fall within last 6 months, *n* (%)	16 (18)	11 (15)	5 (26)
SCREEN I score ≤50, *n* (%)	70 (78)	53 (75)	17 (89)
Blood pressure (mmHg)			
Systolic	148 ± 20	148 ± 19	149 ± 25
Diastolic	72 ± 14	74 ± 14	67 ± 15
Laboratory variables			
Haemoglobin (g/L)	116.3 ± 13.3	117.6 ± 12.7	111.4 ± 14.6
White cell count (×10^9/L)	7.7 ± 2.5	7.6 ± 2.5	8.0 ± 2.6
CRP[b] (mg/L), median (IQR)	5.3 (10.0)	5.0 (10.7)	5.5 (8.4)
Albumin (g/L)	40.9 ± 3.3	41.3 ± 3.3	39.6 ± 3.3
Total protein (g/L)	67.4 ± 5.6	67.7 ± 5.3	66.2 ± 6.6

Data presented as mean ± standard deviation unless otherwise specified.. [a]MMSE data were available for 87 participants.. [b]CRP data were available for 64 participants..
BMI, body mass index; CRP, C-reactive protein; IQR, interquartile range.

Table 5. Regression analyses assessing the influence of Frailty Phenotype components on SF-36 domains

SF-36 domain	Unstandardized β coefficient (95% CI)	Standardized β coefficient	P-value
Physical functioning (adj. $R^2 = 0.40$, $P < 0.001$)			
Weight loss frail	−3.55 (−24.00–16.90)	−0.03	0.73
Weakness frail	−11.89 (−23.41 to −0.37)	−0.19	0.04
Slowness frail	−12.63 (−28.04–2.79)	−0.17	0.11
Physical activity frail	−11.76 (−23.11 to −0.40)	−0.18	0.04
Exhaustion frail	−22.85 (−34.91 to −10.79)	−0.36	<0.001
Role limitations due to physical health (adj. $R^2 = 0.13$, $P = 0.01$)			
Weight loss frail	0.17 (−32.93–33.28)	0.001	0.99
Weakness frail	−4.82 (−23.47–13.83)	−0.06	0.61
Slowness frail	−4.07 (−29.03–20.89)	−0.04	0.75
Physical activity frail	−10.38 (−28.76–8.01)	−0.12	0.27
Exhaustion frail	−27.44 (−46.97 to −7.91)	−0.32	0.01
Role limitations due to emotional problems (adj. $R^2 = 0.26$, $P < 0.001$)			
Weight loss frail	−0.26 (−31.53–31.01)	−0.002	0.99
Weakness frail	5.26 (−12.35–22.87)	0.06	0.55
Slowness frail	22.88 (−0.69–46.45)	0.22	0.06
Physical activity frail	−21.00 (−38.36 to −3.64)	−0.23	0.02
Exhaustion frail	−46.12 (−64.56 to −27.67)	−0.53	<0.001
Energy/fatigue (adj. $R^2 = 0.54$, $P < 0.001$)			
Weight loss frail	−0.07 (−13.19–13.06)	−0.001	0.99
Weakness frail	3.96 (−3.43–11.36)	0.09	0.29
Slowness frail	−4.34 (−14.23–5.55)	−0.08	0.39
Physical activity frail	−15.56 (−22.85 to −8.27)	−0.33	<0.001
Exhaustion frail	−27.30 (−35.04 to −19.56)	−0.59	<0.001
Emotional well-being (adj. $R^2 = 0.12$, $P = 0.01$)			
Weight loss frail	−6.29 (−22.68–10.10)	−0.08	0.45
Weakness frail	7.21 (−2.03–16.44)	0.17	0.12
Slowness frail	0.07 (−12.29–12.43)	0.001	0.99
Physical activity frail	−4.51 (−13.61–4.59)	−0.10	0.33
Exhaustion frail	−16.56 (−26.23 to −6.90)	−0.40	0.001
Social functioning (Adj. $R^2 = 0.24$, $P < 0.001$)			
Weight loss frail	10.02 (−12.89–32.93)	0.09	0.39
Weakness frail	−1.35 (−14.26–11.56)	−0.02	0.84
Slowness frail	−0.87 (−18.14–16.40)	−0.01	0.92
Physical activity frail	−16.89 (−29.61 to −4.16)	−0.26	0.01
Exhaustion frail	−24.62 (−38.14 to −11.11)	−0.39	<0.001
Pain (adj. $R^2 = 0.44$, $P < 0.001$)			
Weight loss frail	10.71 (−7.69–29.10)	0.10	0.25
Weakness frail	4.64 (−5.73–15.00)	0.08	0.38
Slowness frail	−23.57 (−37.44 to −9.71)	−0.33	0.001
Physical activity frail	−3.12 (−13.33–7.10)	−0.05	0.55
Exhaustion frail	−30.41 (−41.27 to −19.56)	−0.52	<0.001
General health (adj. $R^2 = 0.08$, $P = 0.04$)			
Weight loss frail	11.17 (−3.82–26.16)	0.16	0.14
Weakness frail	8.67 (0.23–17.12)	0.24	0.04
Slowness frail	−3.73 (−15.03–7.57)	−0.08	0.51
Physical activity frail	−4.62 (−12.94–3.70)	−0.12	0.27
Exhaustion frail	−10.36 (−19.20 to −1.52)	−0.28	0.02

Adj. R^2, adjusted R^2.

- Self perc
- (i) I felt t
  going
- 'How ofte

0 = rarely

1 = some

2 = moder

3 = most o

=> Self-pe
statement

These questions are about how you feel and how things have been with you **during the past 4 weeks**. For each question, please give the one answer that comes closest to the way you have been feeling.

How much of the time during the **past 4 weeks**...

	All of the time	Most of the time	A good bit of the time	Some of the time	A little of the time	None of the time
23. Did you feel full of pep?	1	2	3	4	5	6
24. Have you been a very nervous person?	1	2	3	4	5	6
25. Have you felt so down in the dumps that nothing could cheer you up?	1	2	3	4	5	6
26. Have you felt calm and peaceful?	1	2	3	4	5	6
27. Did you have a lot of energy?	1	2	3	4	5	6
28. Have you felt downhearted and blue?	1	2	3	4	5	6
29. Did you feel worn out?	1	2	3	4	5	6
30. Have you been a happy person?	1	2	3	4	5	6
31. Did you feel tired?	1	2	3	4	5	6

could not get

ver ≥2 for either

Non-steroidal anti-inflammatory drugs

CLINICAL KIDNEY JOURNAL

Clinical Kidney Journal, 2020, vol. 13, no. 1, 63–71

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Original Article

ORIGINAL ARTICLE

Non-steroidal anti-inflammatory drugs in chronic kidney disease: a systematic review of prescription practices and use in primary care

Claire Lefebvre[1,2], Jade Hindié[1], Michael Zappitelli[3,4], Robert W. Platt[2,5,6,7] and Kristian B. Filion[2,5,7]

Context

- NSAID are nephrotoxic
- KDIGO: avoid NSAID if eGFR<30 mL/min/1.73m²
  avoid prolonged use if eGFR<60 mL/min/1.73m²
- NSAID prescribing practices or use in CKD patients in a primary care setting
- Review of observational studies (EMBASE/MEDLINE)

Table 1. Characteristics of studies assessing point prevalence of NSAID use among patients with CKD

Reference (location)	Source population	Patients with CKD, *n* (% female)	Age (years), mean (SD)	CKD definition (calculation equation)	NSAID definition	Study period	Prevalence of NSAIDs, % (95% CI)
Dorks *et al.* [25] (Germany)	21 nursing homes (>96% followed by primary care physician)	436 (75)[a]	83 (11)[a]	Single eCCr <60 (C–G) Stage 3: 76% Stages 4–5: 24%	NSAID prescription or OTC use in nursing home chart	2014–15	20 (17–25)
Fox *et al.* [35] (USA)	Patients from a private primary care practice and DM and/or HTN patients from an urban primary care practice	181 (NR)	NR (>18)	Single eGFR (NR) Stages 3–5: 100%	NSAID use in EMR or paper chart review	NR	13 (8–18)
Koffeman *et al.* [26] (The Netherlands)	Patients presenting a musculoskeletal complaint at primary care practices participating in the Integrated Primary Care Information database	285 (54)[a]	47 (17)[a]	Single eGFR (NR) Stages 4–5: 100%	NSAID prescription issued during musculoskeletal complaint episode from EMR	2000–10	19 (14–24)
Lioté *et al.* [37] (France)	Patients with gout or gout-related arthritis in a random sample of primary care and rheumatology practices (primary care data presented)	112 (13)[a]	63 (11)[a]	Single eCCr (C–G or measured using a 24-h urine sample) Stages 3–5: 100%	NSAID prescription recorded on a case report form during baseline visit	2008–09	10 (4–15)
McIntyre *et al.* [34] (UK)	Thirty-two primary care practices participating in the Renal Risk in Derby study	1741 (60)	73 (10)	Two eGFRs separated by at least 3 months (MDRD) Stage 3A: 77% Stage 3B: 23%	NSAID prescription or OTC use by questionnaire (validated with latest prescription)	2008–10	8 (7–10)
Weddle *et al.*[b] [27] (USA)	Resident-based primary care clinic	29 (NR)	72 (6)	CKD diagnosis present in patient's EMR	NSAID prescription in EMR	2014–15	21 (6–35)
Weddle *et al.*[c] [27] (USA)	Resident-based primary care clinic	32 (NR)	74 (7)	CKD diagnosis present in patient's EMR	NSAID prescription in EMR	2014	13 (10–24)

Table 2. Characteristics of studies assessing period prevalence of NSAID use among patients with CKD

Reference (location)	Source population	Patients with CKD, *n* (% female)	Age (years), mean (SD)	CKD definition (calculation equation)	NSAID definition	Study period	Prevalence of NSAIDs, % (95% CI)
Allen *et al.* [31] (USA)	Multispecialty group practice of 15 ambulatory health centers in Massachusetts (only 10% followed by a nephrologist)	11 774 (60)	73 (12)	Two eGFRs separated by at least 3 months (MDRD) Stage 3: 97% Stage 4: 3%	NSAID prescription in the EMR	2008–9	10 (9–10)
Arora *et al.* [32] (USA)	Claims data from major insurer (analysis restricted to patients not referred to a nephrologist)	15 177 (61)	72 (NR)	Two eGFRs separated by at least 3 months (MDRD) Stage 3: 97% Stage 4: 3% Stage 5: <1%	Insurance claim for NSAID prescription	2007–13	24 (23–25)
Guthrie *et al.* [29] (Scotland)	315 primary care practices contributing to the Scottish program for improving clinical effectiveness in primary care	27 668 (52)[a]	NR (≥65)	CKD diagnosis codes	NSAID prescription in the EMR	2007	8 (8–9)
Ingrasciotta *et al.* [30] (Italy)	123 primary care physicians meeting standard quality criteria within Ariana database	1989 (51)	72 (NR)	CKD diagnosis codes	NSAID prescription reimbursed by National Health System	2006–11	56 (54–58)
Keohane *et al.* [36] (Ireland)	At risk patients[b] from primary care 'training practice' (currently 18 practices)	158 (56)[a]	76 (10)	Single eGFR (MDRD) Stage 3: 92% Stage 4: 6% Stage 5: 1%	NSAID prescription in EMR	NR	3 (1–5)
Koffeman *et al.* [28] (Netherlands)	Four primary care practices in the Rotterdam region	8 (49)[a]	69 (10)[a]	Single eGFR (NR) Stages 4–5: 100%	Any OTC NSAID use reported via questionnaire	2012	25 (0–50)
Martinez-Ramirez *et al.* [33] (Mexico)	Patients without a nephrology referral from two primary care units	53 (38)	62.8 (9.9)	eGFR (MDRD) and/or micro-/macroalbuminuria Stage 1: 39% (plus albuminuria)[c]	NSAID use in medical chart	NR	32 (20–45)

N=14 studies (one excluded because n=8)
N=49,209 CKD patients

Cross-sectional prevalence

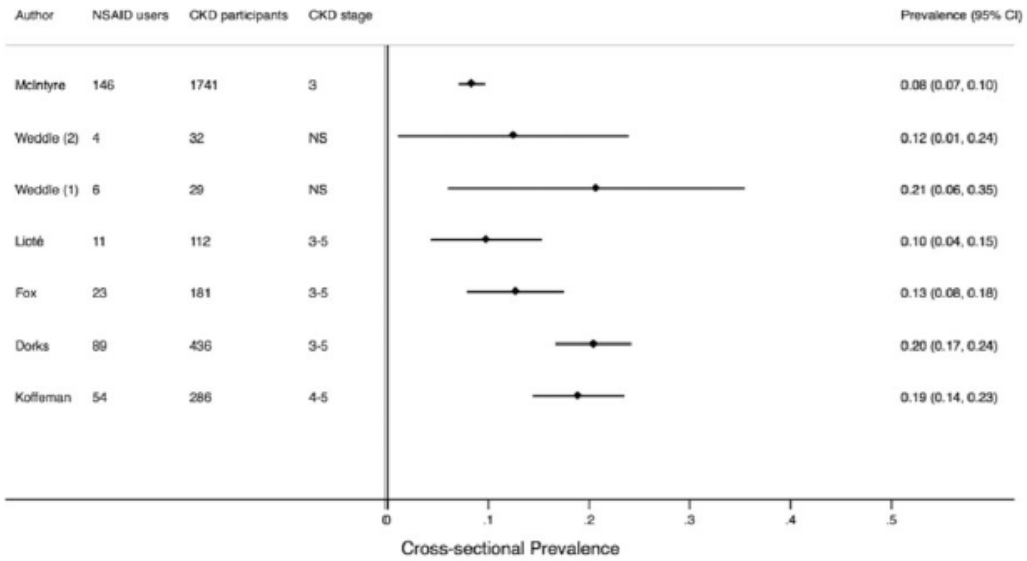

FIGURE 2: Forest plot of studies assessing point prevalence of NSAID prescription/use among CKD patients in primary care. Weddle (2), retrospective cohort; Weddle (1), prospective cohort; NS, not specified.

8 to 20 %

Yearly prevalence

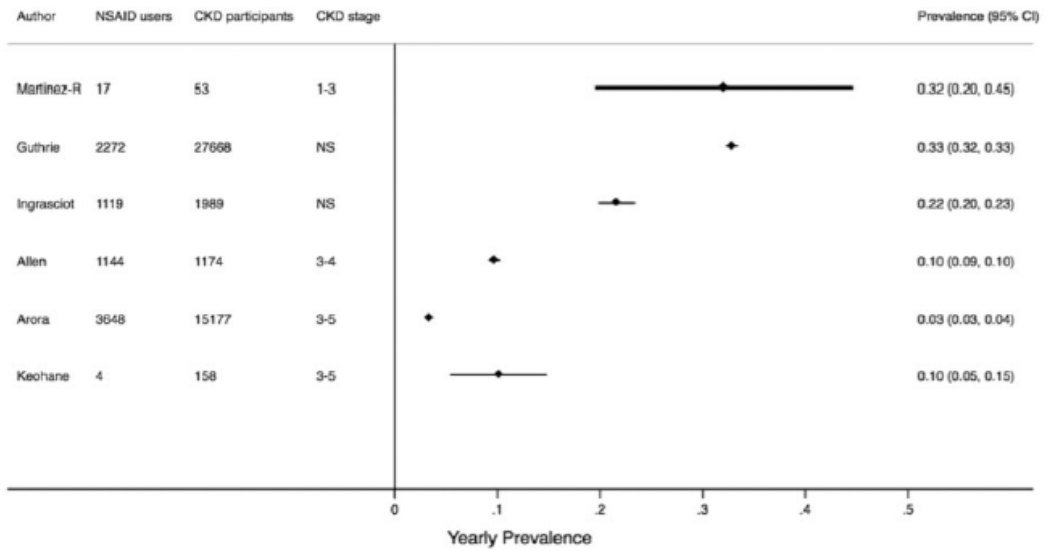

FIGURE 3: Forest plot of studies assessing period prevalence of NSAID prescription/use among CKD patients in primary care, expressed as yearly prevalence. NS, not specified.

3 to 33 %

- Few studies
- Absence of data on duration of treatment
- Large heterogeneity
- Prevalence of prescription very different
- Prevalence remains (too) high
- Consequences? How decrease this prevalence?

Arteriovenous fistula thrombosis

CLINICAL KIDNEY JOURNAL

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Original Article

ORIGINAL ARTICLE

Arteriovenous fistula thrombosis is associated with increased all-cause and cardiovascular mortality in haemodialysis patients from the AURORA trial

Sophie Girerd[1,2,3], Nicolas Girerd[2,3], Luc Frimat[1,3], Hallvard Holdaas[4], Alan G. Jardine[5], Roland E. Schmieder[6], Bengt Fellström[7], Nicla Settembre[8], Sergei Malikov[8], Patrick Rossignol[2,3] and Faiez Zannad[2,3]; on behalf of the AURORA study group and French Clinical Research Infrastructure Network Investigation Network Initiative-Cardiovascular and Renal Clinical Trialists (F-CRIN INI-CRCT)

Context

- 2439 chronic hemodialysis patients, AURORA trial
- AVF (n=2199) or graft (AVG) (n=240)
- Vascular Access thrombosis was a pre-specified secondary outcome
- Follow up: 3,8 years
- AV thrombosis: 278 AVF (12,6%) and 94 AVG (39,2%)
- Mortality: 1085 (962 AVF and 123 AVG)
- VA was restored at 22±64 days after thrombosis
- 27 patients had no restoration (central catheter).

Results

Table 1. Baseline characteristics and recorded outcomes of patients with VA thrombosis during follow-up in comparison with patients with no VA complications according to VA type

Characteristics	AVF ($N = 2199$) No thrombosis ($n = 1921$)	AVF ($N = 2199$) Thrombosis ($n = 278$)	P-value	AVG ($N = 240$) No thrombosis ($n = 146$)	AVG ($N = 240$) Thrombosis ($n = 94$)	P-value
Baseline characteristics						
Age (years)	63.78 ± 8.71	64.69 ± 8.46	0.10	63.38 ± 8.33	64.61 ± 8.14	0.26
Years on RRT	4.52 ± 5.20	4.49 ± 5.33	0.93	6.12 ± 6.47	5.68 ± 6.35	0.60
Measured K_t/V	1.44 ± 0.56	1.43 ± 0.59	0.82	1.49 ± 0.41	1.42 ± 0.33	0.17
Albumin (g/L)	39.98 ± 3.40	39.48 ± 3.44	**0.02**	39.57 ± 3.08	39.33 ± 2.77	0.54
Haemoglobin (g/dL)	11.69 ± 1.61	11.70 ± 1.49	0.87	11.79 ± 1.57	11.84 ±1.50	0.81
hs-CRP (mg/L)	0.95 ± 1.12	1.04 ± 1.21	0.24	1.10 ± 1.21	1.18 ± 1.35	0.62
BMI (kg/m^2)	25.27 ± 4.64	24.93 ± 4.47	0.24	25.48 ± 5.43	26.22 ± 5.91	0.32
SBP (mmHg)	137.96 ± 24.22	132.22 ± 22.93	**<0.001**	140.12 ± 26.19	125.24 ± 23.61	**<0.001**
DBP (mmHg)	76.20 ± 12.62	74.41 ± 12.41	**0.03**	76.94 ± 12.41	70.02 ± 12.58	**<0.001**
Male gender (%)	66.0	62.6	0.28	43.2	51.1	0.24
Current smoker (%)	15.2	14.0	0.65	24.0	9.6	**0.006**
Diabetes (%)	25.0	24.1	0.77	24.7	27.7	0.65
Peripheral artery disease (%)	13.7	18.7	**0.03**	18.5	19.1	1.00
History of coronary disease	12.1	10.1	0.37	16.4	19.1	0.60
Platelet inhibitors (%)	41.4	38.1	0.33	61.0	53.2	0.28
Rosuvastatin (%)	49.8	48.2	0.65	50.0	59.6	0.19
Intervention for VA complication, *n* (%)						
Thrombolysis	N/A	48 (17.3)	N/A	N/A	25 (26.6)	N/A
Angioplasty ± stent		33 (11.9)			15 (16.0)	
Surgical refashioning		69 (24.8)			29 (30.9)	
New access needed		125 (45.0)			25 (26.6)	
Unknown		3 (1.1)			0 (0)	
Number of deaths, *n* (%)	835 (43.5)	127 (45.7)	N/A	77 (52.7)	46 (48.9)	N/A
<90 days after thrombosis, *n* (%)	N/A	28 (10.1)	N/A	N/A	5 (5.3)	N/A
>90 days after thrombosis, *n* (%)	N/A	99 (35.6)	N/A	N/A	41 (43.6)	N/A
Cause of death, *n* (%)						
Coronary heart disease	273 (32.7)	33 (26.0)	N/A	17 (22.1)	15 (32.6)	N/A
Other cardiac cause	44 (5.3)	7 (5.5)	N/A	4 (5.2)	3 (6.5)	N/A
Other vascular cause	62 (7.4)	12 (9.4)	N/A	6 (7.8)	2 (4.3)	N/A
Other CV cause	1 (0.2)	0 (0)	N/A	0 (0)	0 (0)	N/A
Stroke	49 (5.9)	8 (6.3)	N/A	3 (3.9)	3 (6.5)	N/A
Non-CV cause	320 (38.3)	60 (47.2)	N/A	35 (45.5)	20 (43.5)	N/A
Non-adjudicated death	86 (10.3)	7 (5.5%)	N/A	12 (15.6)	3 (6.5)	N/A

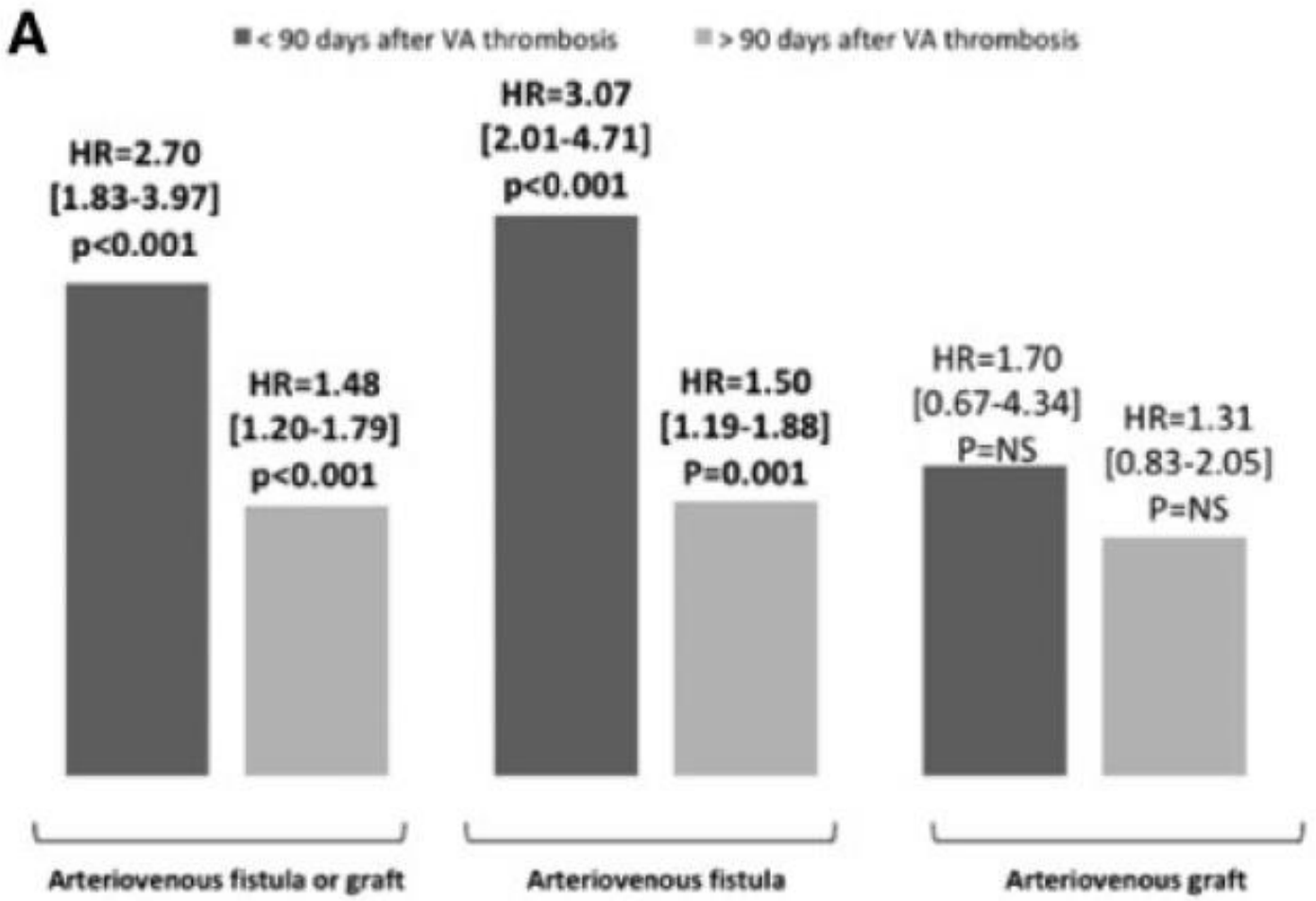

FIGURE 2: Association in multivariable analysis [adjusted for age, gender, years on RRT, type of VA (when applicable), current smoking, diabetes, history of coronary disease, history of peripheral arterial disease, BMI, systolic blood pressure, calculated K_t/V, albumin level, haemoglobin level and hsCRP level (at baseline), platelet inhibitors and rosuvastatin] between VA complications and (A) all-cause

Causal? Association?

…but at least it is a major clinical event


Thank
you