XI congresso nazionale

simeu

ROMA 24-26 MAGGIO 2018

Università
degli Studi
della Campania
Luigi Vanvitelli

La Malattia Renale Acuta in PS: Come Riconoscerla?

Mauro Giordano

26 maggio 2018

Sig.ra Maria di 81 aa giunge in P.S. per anuria

In anamnesi:

-Pregresso NSTEMI

-Pregressa sepsi vie urinarie

-Diabetica

-Pregresso ictus ischemico

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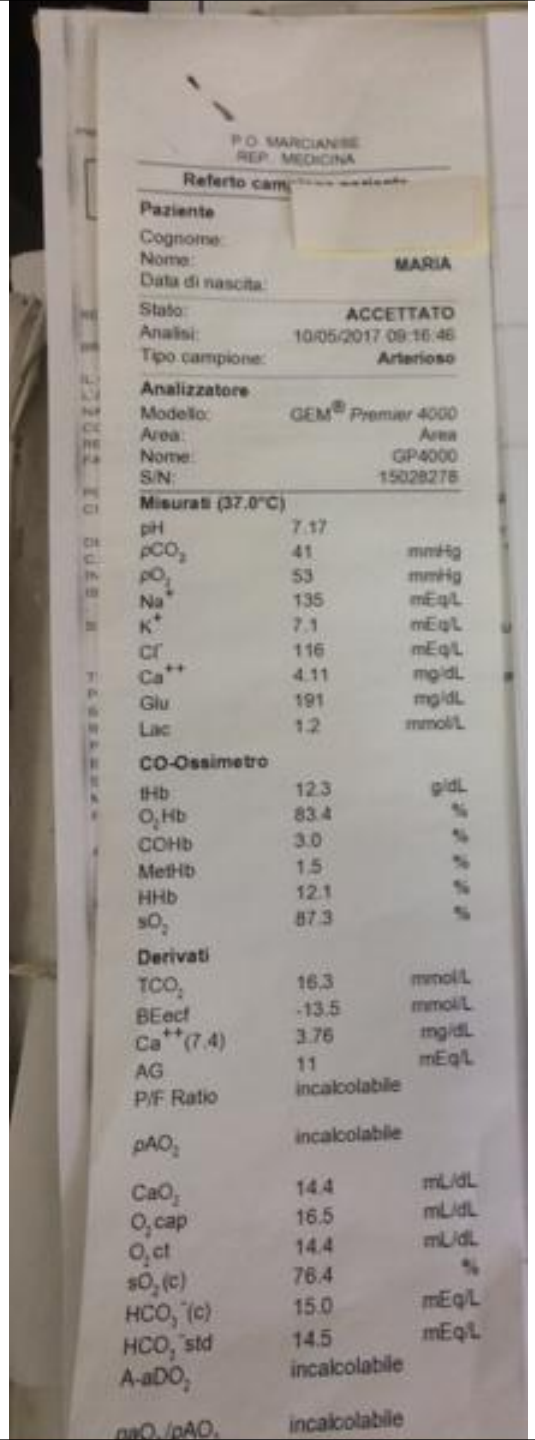
ABG di Maria all'ingresso

ore 9.16

pH	7.17
pCO2	41
pO2	63
K+	**7.1**
Na+	138
HCO3-	15
Cl-	116
Glu	191
Lac	1.2


P.O. MARCIANISE
REP. MEDICINA

Referto cam

Paziente
Cognome:
Nome: MARIA
Data di nascita:
Stato: ACCETTATO
Analisi: 10/05/2017 09:16:46
Tipo campione: Arterioso

Analizzatore
Modello: GEM® Premier 4000
Area: Area
Nome: GP4000
S/N: 15028278

Misurati (37.0°C)

pH	7.17	
pCO_2	41	mmHg
pO_2	53	mmHg
Na^+	135	mEq/L
K^+	7.1	mEq/L
Cl^-	116	mEq/L
Ca^{++}	4.11	mg/dL
Glu	191	mg/dL
Lac	1.2	mmol/L

CO-Ossimetro

tHb	12.3	g/dL
O_2Hb	83.4	%
COHb	3.0	%
MetHb	1.5	%
HHb	12.1	%
sO_2	87.3	%

Derivati

TCO_2	16.3	mmol/L
BEecf	-13.5	mmol/L
$Ca^{++}(7.4)$	3.76	mg/dL
AG	11	mEq/L
P/F Ratio	incalcolabile	
pAO_2	incalcolabile	
CaO_2	14.4	mL/dL
O_2cap	16.5	mL/dL
O_2ct	14.4	mL/dL
$sO_2(c)$	76.4	%
$HCO_3^-(c)$	15.0	mEq/L
HCO_3^-std	14.5	mEq/L
$A\text{-}aDO_2$	incalcolabile	
paO_2/pAO_2	incalcolabile	

Arrivano gli esami:

Ore 11.20

Crea 4.91

Urea 183

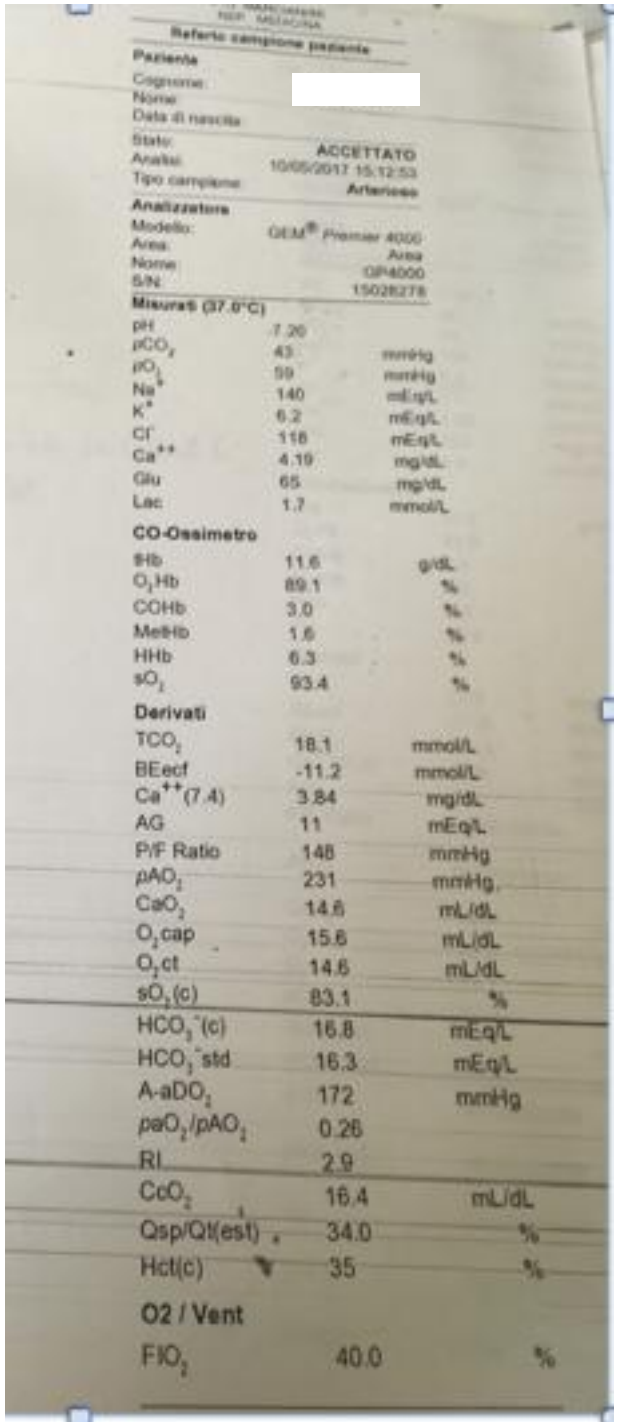
Terapia in P.S.

- Calcio gluconato 1 fl (1000 mEq)
- Bicarbonato di sodio 10 fl (100 mEq)
- Furosemide 40 mg ev
- Glucosata 5% 500 ml + 10 UI insulina R

Controllo ABG:

ore 15.12

pH	7.20
K+	6.2
Cl-	118
HCO3-	16.8



Referto campione paziente

Paziente

Cognome:
Nome:
Data di nascita:

Stato: ACCETTATO
Analisi: 10/05/2017 15:12:53
Tipo campione: Arterioso

Analizzatore

Modello: GEM® Premier 4000
Area: Area
Nome: GP4000
S/N: 15028278

Misure (37.0°C)

pH	7.20	
pCO_2	43	mmHg
pO_2	59	mmHg
Na^+	140	mEq/L
K^+	6.2	mEq/L
Cl^-	118	mEq/L
Ca^{++}	4.19	mg/dL
Glu	65	mg/dL
Lac	1.7	mmol/L

CO-Ossimetro

tHb	11.6	g/dL
O_2Hb	89.1	%
COHb	3.0	%
MetHb	1.6	%
HHb	6.3	%
sO_2	93.4	%

Derivati

TCO_2	18.1	mmol/L
BEecf	-11.2	mmol/L
$Ca^{++}(7.4)$	3.84	mg/dL
AG	11	mEq/L
P/F Ratio	148	mmHg
pAO_2	231	mmHg
CaO_2	14.6	mL/dL
O_2cap	15.6	mL/dL
O_2ct	14.6	mL/dL
$sO_2(c)$	83.1	%
$HCO_3^-(c)$	16.8	mEq/L
HCO_3^-std	16.3	mEq/L
$A\text{-}aDO_2$	172	mmHg
paO_2/pAO_2	0.26	
RI	2.9	
CcO_2	16.4	mL/dL
Qsp/Qt(est)	34.0	%
Hct(c)	35	%

O2 / Vent

FIO_2	40.0	%

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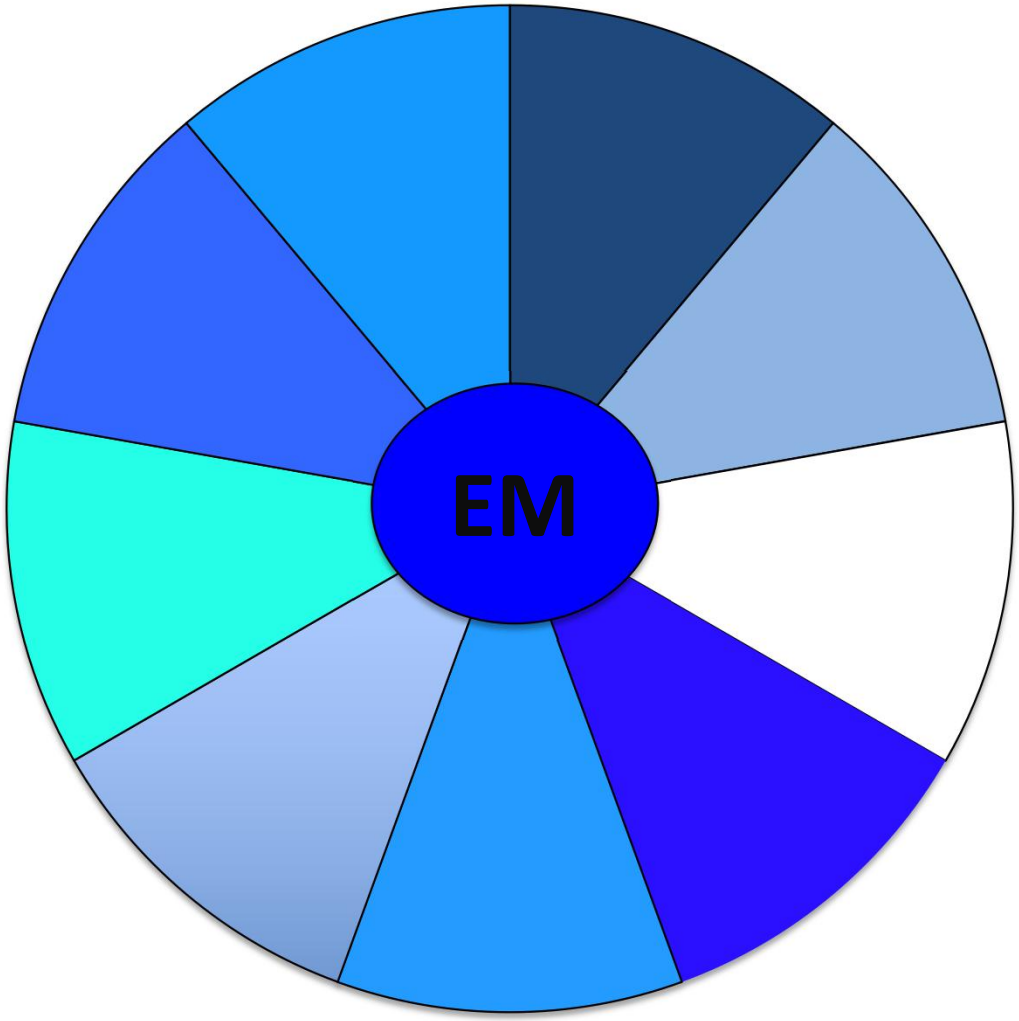

- Anestesiology
- Cardiology
- Surgery
- Endocrinology
- Obstretic
- Infective disease
- Internal Medicine
- Neurology
- Oculistic

.....and Nephrology?

Canadian Society of Nephrology/ Société canadienne de néphrologie CSN/SCN

CANADIAN JOURNAL OF KIDNEY HEALTH AND DISEASE
Journal canadien de la santé et de la maladie rénale

Original Research Article

The Clinical Epidemiology and 30-Day Outcomes of Emergency Department Patients With Acute Kidney Injury

Canadian Journal of Kidney Health and Disease
Volume 4: 1–13

DOI: 10.1177/2054358117703985
journals.sagepub.com/home/cjk
SAGE

Frank Xavier Scheuermeyer[1,2], Eric Grafstein[2,3], Brian Rowe[4,5], Jay Cheyne[1,2], Brian Grunau[1,2], Aaron Bradford[1,2], and Adeera Levin[2,6]

What this adds

Overall, 5.5% of all emergency department patients had acute kidney injury. One-third of acute kidney injury patients were discharged home, the majority with no renal-specific follow-up.

Int J Clin Pract, April 2016, **70**, 4, 330–339. doi: 10.1111/ijcp.12774

ORIGINAL PAPER

THE INTERNATIONAL JOURNAL OF CLINICAL PRACTICE

The epidemiology of hospitalised acute kidney injury not requiring dialysis in England from 1998 to 2013: retrospective analysis of hospital episode statistics

N. V. Kolhe,[1] A. W. Muirhead,[2] S. R. Wilkes,[3] R. J. Fluck,[1] M. W. Taal[1,4]

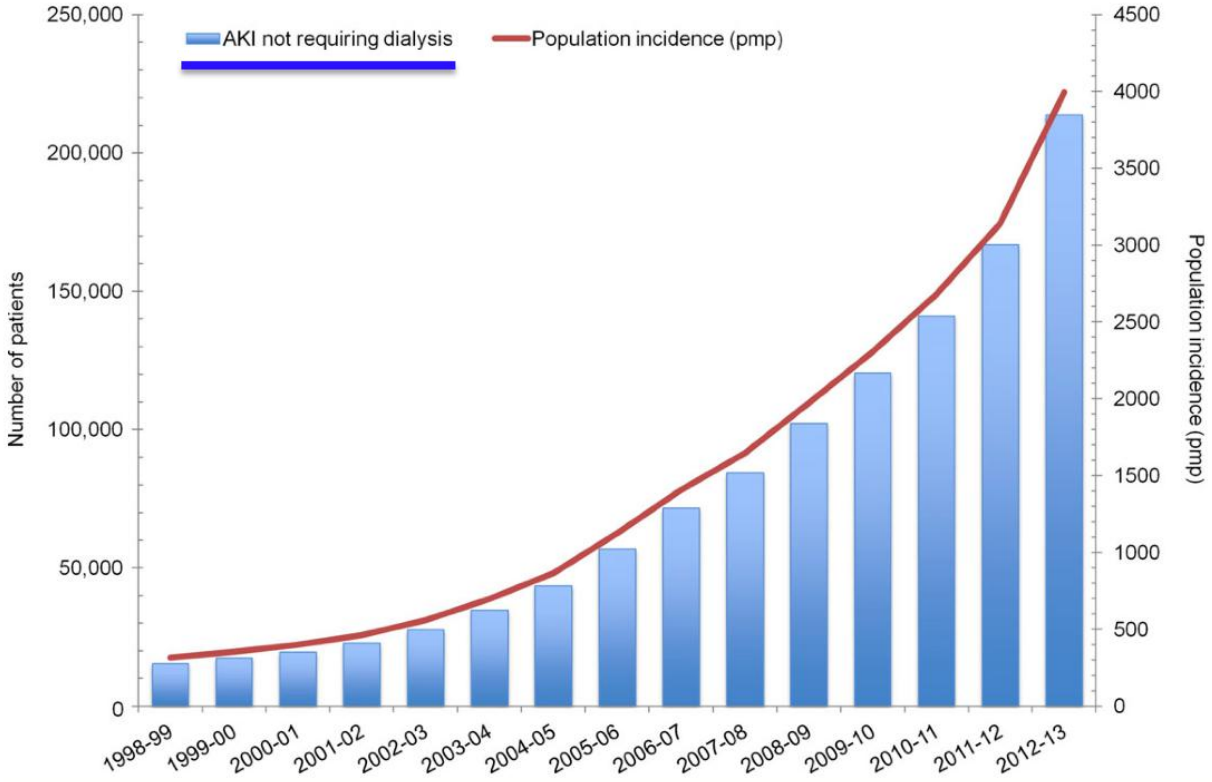

Figure 2 Total number of hospital admissions and population incidence of AKI reported as per million people (pmp) in England

Int J Clin Pract, April 2016, **70**, 4, 330–339. doi: 10.1111/ijcp.12774

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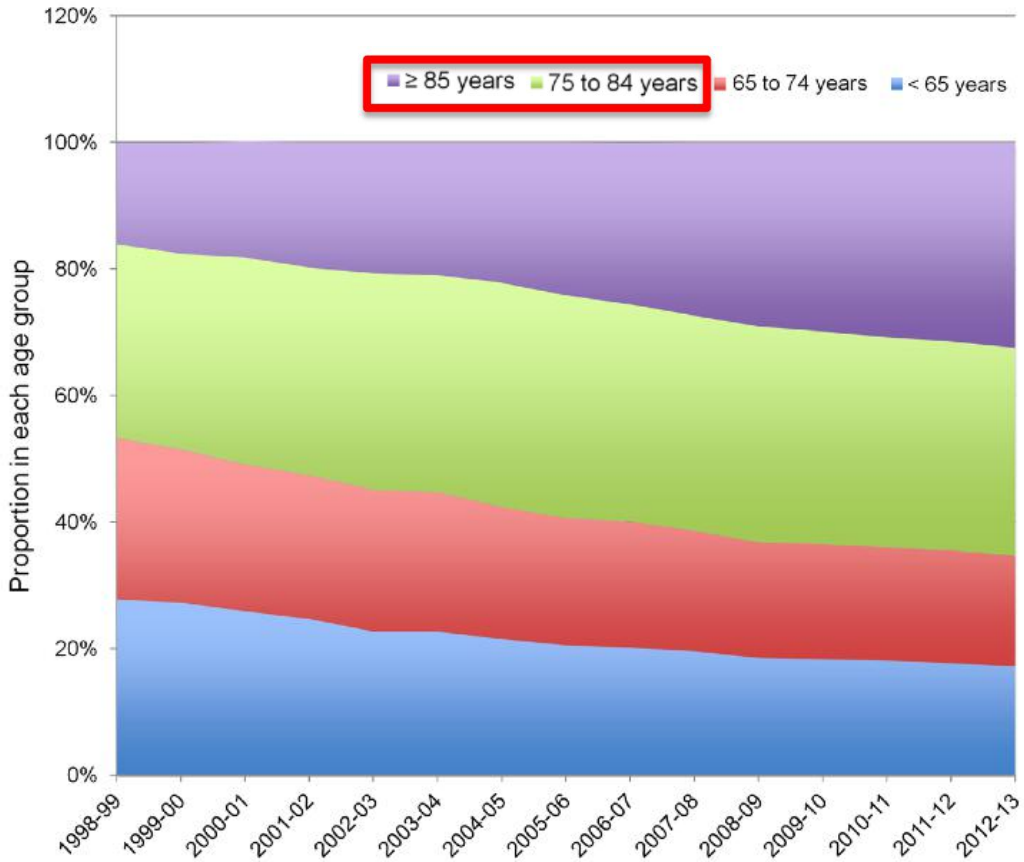


OFFICIAL JOURNAL OF THE INTERNATIONAL SOCIETY OF NEPHROLOGY

kidney INTERNATIONAL supplements

Table 11 | Definitions of AKI, CKD, and AKD

	Functional criteria	Structural criteria
AKI	Increase in SCr by 50% within 7 days, *OR* Increase in SCr by 0.3 mg/dl (26.5 μmol/l) within 2 days, *OR* Oliguria	No criteria
AKD	AKI, *OR* GFR <60 ml/min per 1.73 m^2 for <3 months, *OR* Decrease in GFR by $\geqslant 35\%$ or increase in SCr by $>50\%$ for <3 months	Kidney damage for <3 months

OFFICIAL JOURNAL OF THE INTERNATIONAL SOCIETY OF NEPHROLOGY

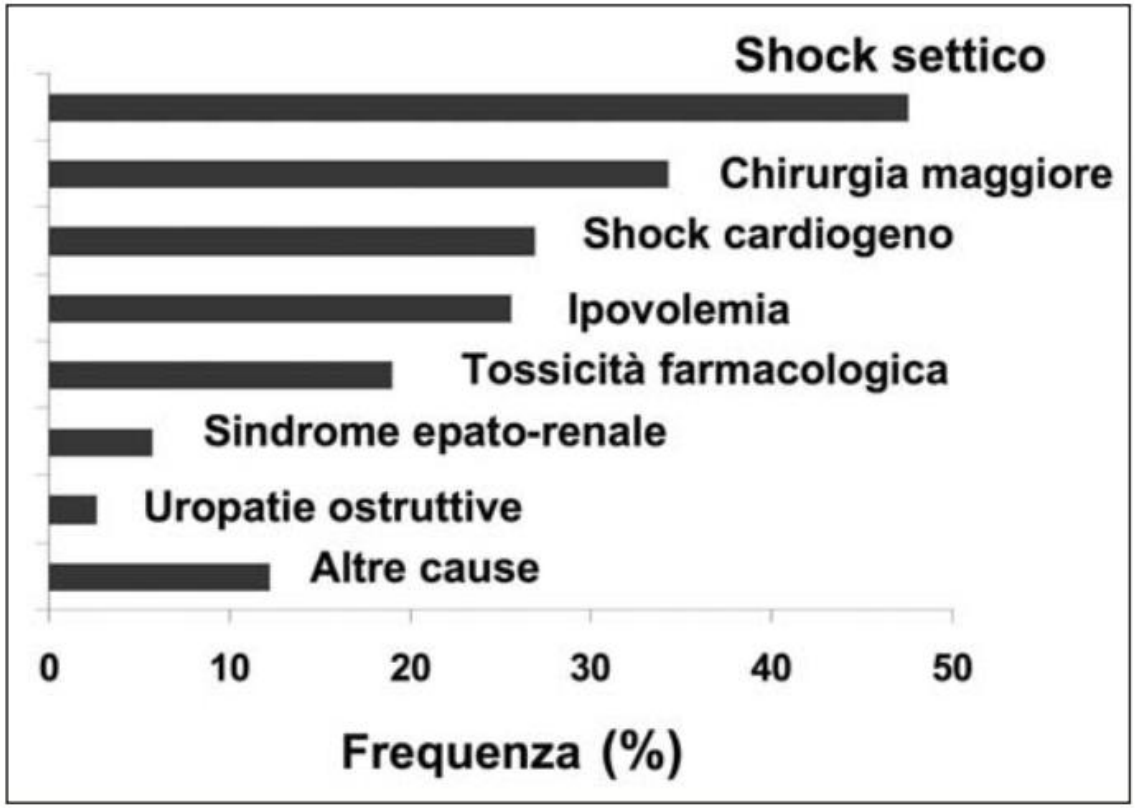
kidney INTERNATIONAL supplements

KIDGO, Kidney Int Suppl. 2012

Table 14 | Integrated approach to interpret measures of kidney function and structure for diagnosis of AKI, AKD, and CKD

	Measures			
Diagnosis	GFR/SCr	Oliguria	Kidney damage	Small kidneys
AKI	X	X		
AKD	X		X	
CKD	X	X	X	X

Eziopatogenesi AKI



Kellum JA, et Al. Crit Care Med 2006

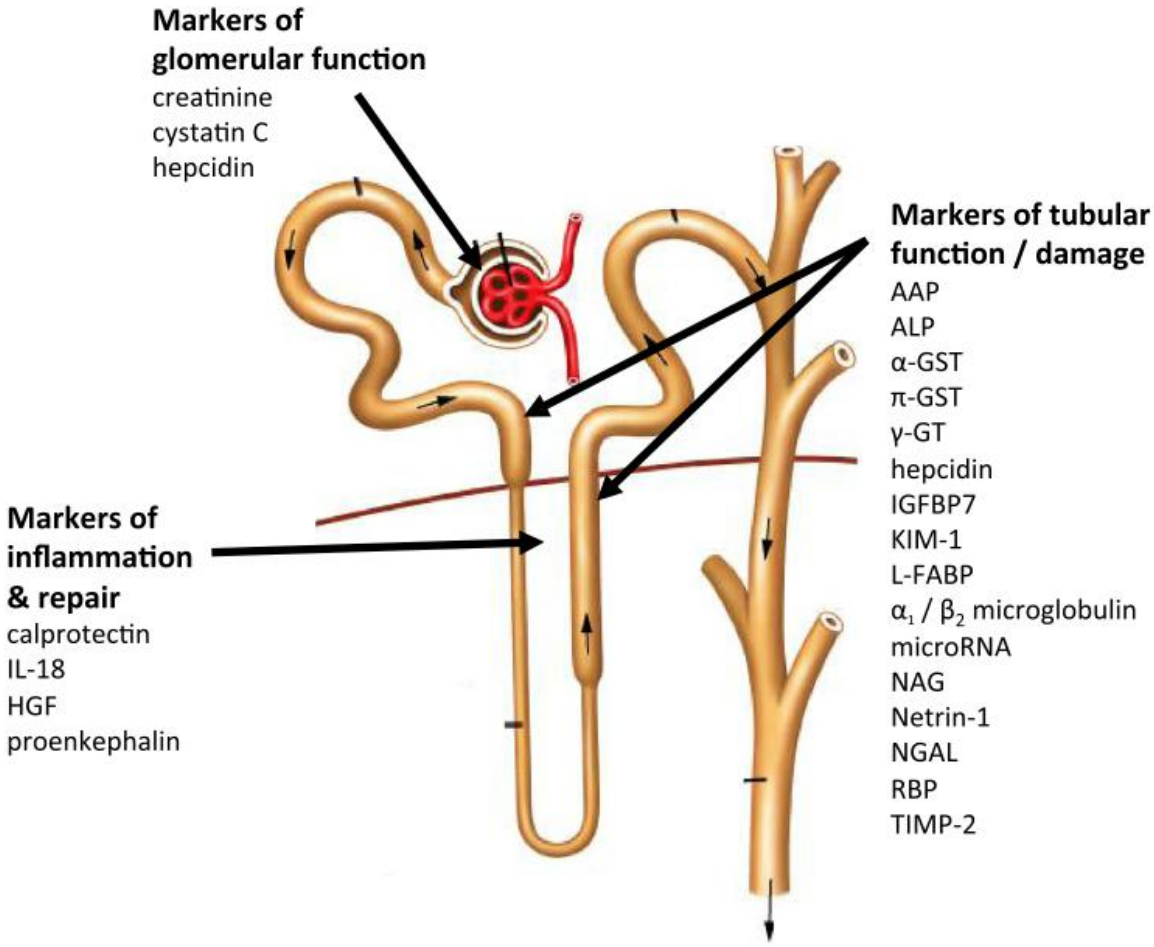
Ostermann and Joannidis *Critical Care* (2016) 20:299
DOI 10.1186/s13054-016-1478-z

Critical Care

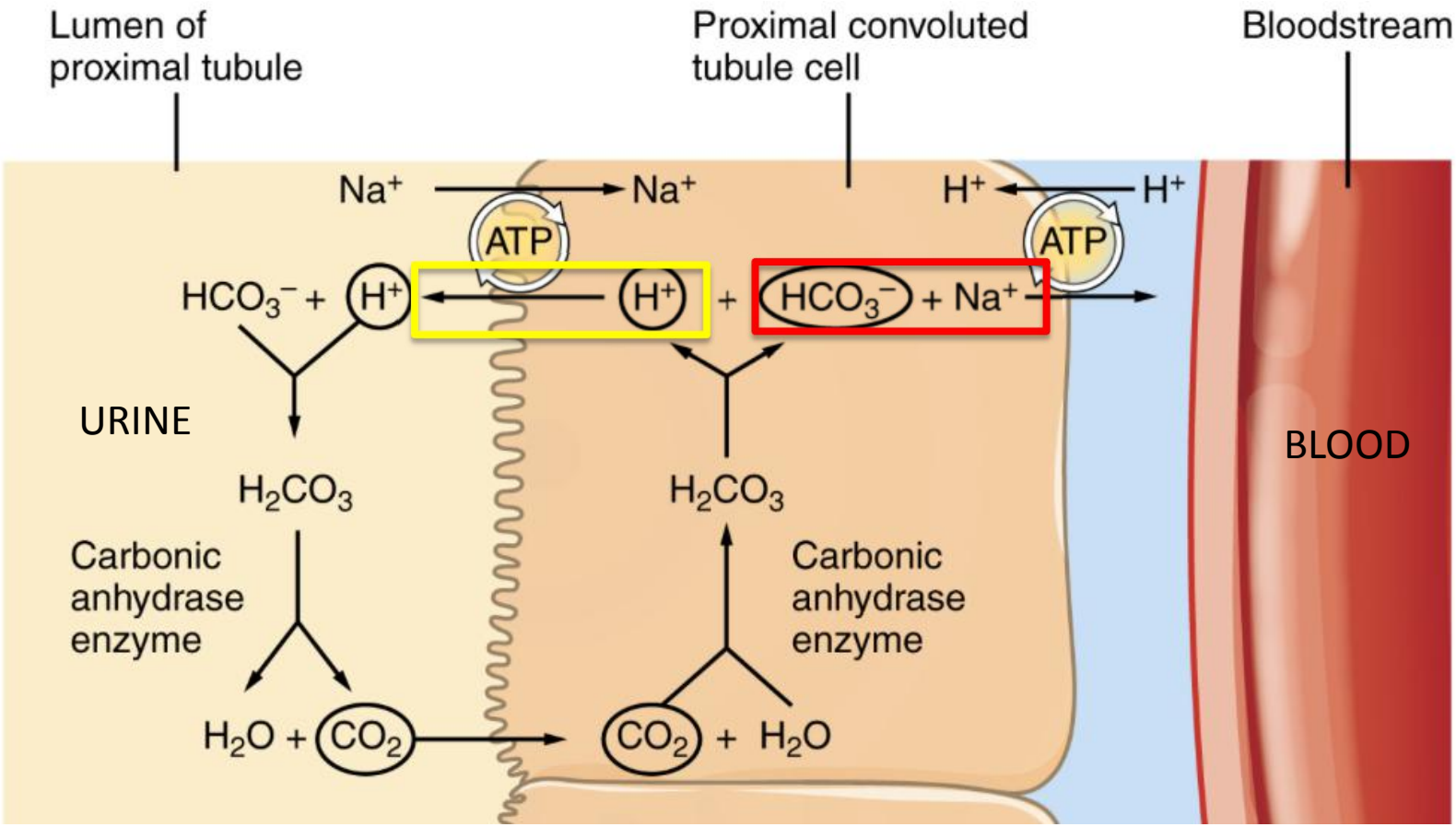
REVIEW Open Access

Acute kidney injury 2016: diagnosis and diagnostic workup

Marlies Ostermann[1*] and Michael Joannidis[2*]



The impaired acid excretion and regeneration of bicarbonate in AKI is resulting in hyperchloremic metabolic acidosis



Kraut JA, Am J Kidney Dis. 2005

AKI

Alterata escrezione renale di acidi

Ridotto riassorbimento di bicarbonati

Risultato: Acidosi Metabolica Ipercloremica

Kraut JA, Am J Kidney Dis. 2005

HCMA Evaluating Formula

(pH x bicarbonate) / chloride

normale: (7.35 x 24 mmol)/ 95 mmol = 1.85

Clinical characteristics in the non-AKI and AKI groups

APACHE (Acute Physiology and Chronic Health Evaluation), BMI (Body Mass Index), COPD (Chronic Obstructive Pulmonary Disease). The values are indicated by percentage and mean ±SE. * = p <0.01.

	non-AKI	**AKI**
Patients N. (male)	64 (22)	70 (26)
Age (years)	75±4	77±3
APACHE II score	22±3	24±4
Charlson Comorbidity Index	4±1.8	4±1.3
BMI (Kg/m^2)	21.2±6	22.3±5
Diabetes (%)	32	47 *
Hypertension (%)	59	50
Cirrhosis (%)	2	10 *
COPD (%)	10	11
Heart Failure (%)	17	21 *
Serum Creatinine (mg/dl)	0.79±0.02	2.06±0.01 *
e-GFR (ml/min/1.73 m^2)	91.3±0.45	33.4±0.25 *

Mauro Giordano et al. 2018, in press

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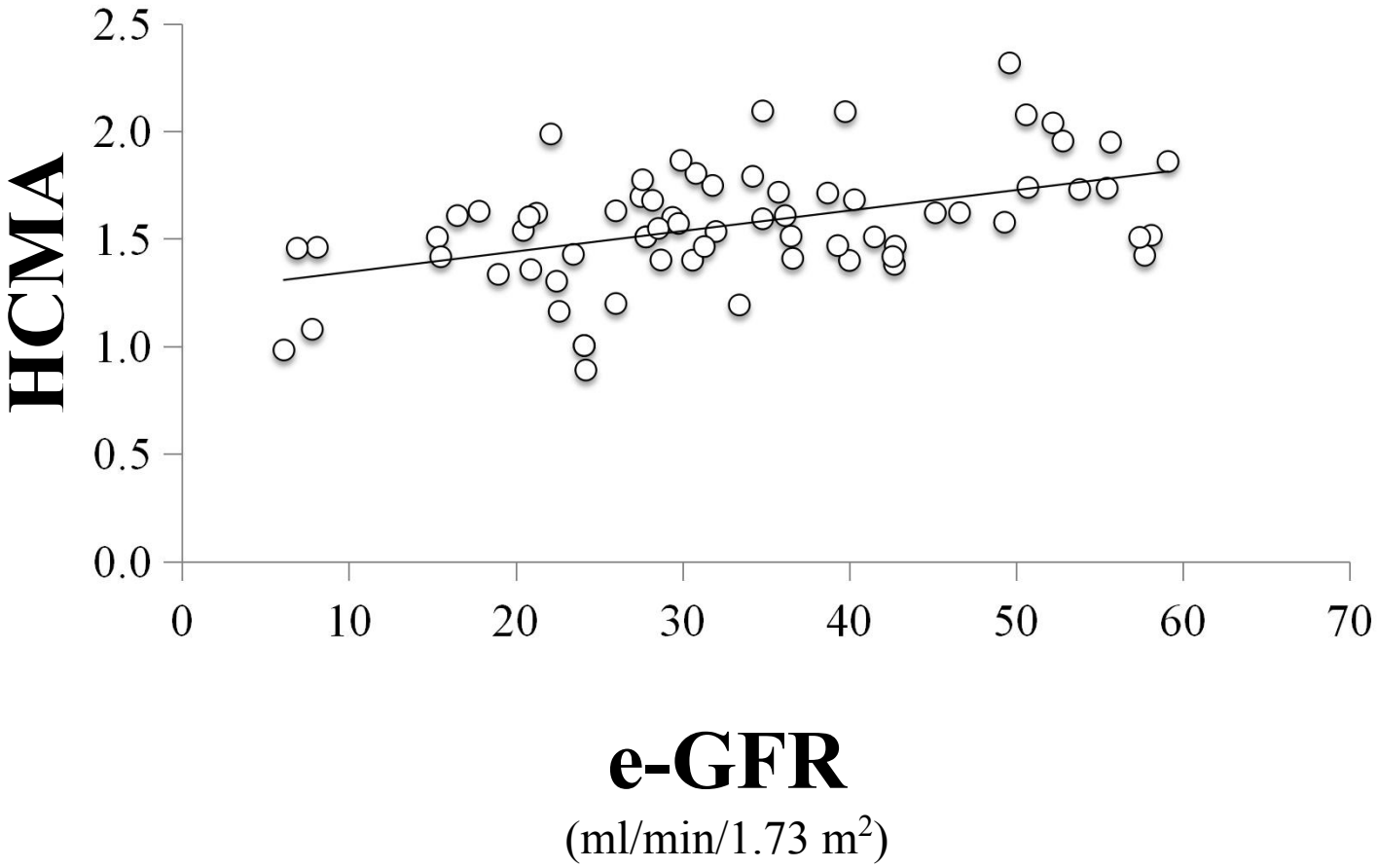
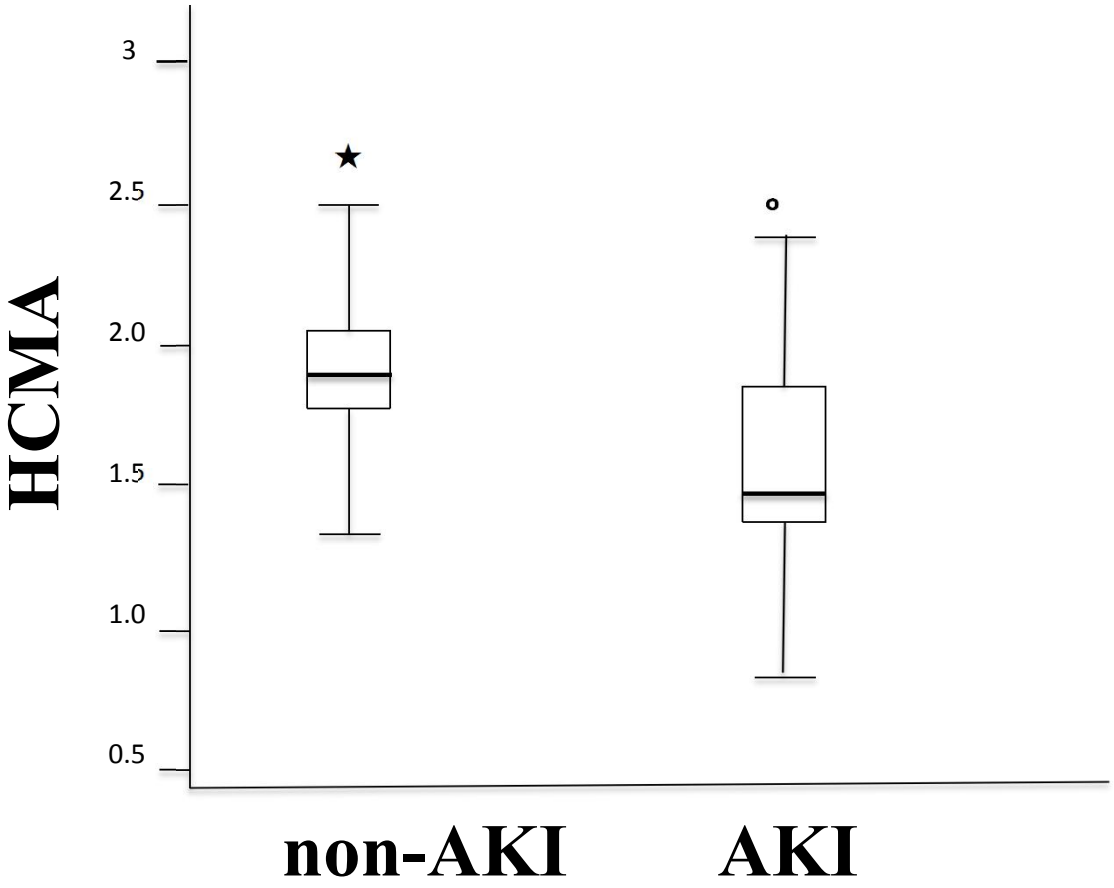
AKI



Mauro Giordano et al. 2018, in press



Mauro Giordano et al. 2018, in press

HCMA di Maria?

(pH x bicarbonate) / cloride

normale: (7.35 x 24 mmol)/ 95 mmol = 1.85

Maria: (7.17 x 15 mmol)/ 116 mmol = **0.93!**

Take Home Message

Acidosi Metabolica Ipercloremica:

Un **rapido** strumento per il **sospetto** di AKI
nelle mani del medico d'urgenza

"Emergency Medicine

is the most interesting 15 minutes

of every other speciality"

Dan

Sandberg. BEEM meeting. Sweden March 2014