Recent Approach of KDIGO to CKD-CVD

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Kidney Disease: Improving Global Outcomes (KDIGO) is an international organization whose mission is to improve the care and outcomes of kidney disease patients worldwide by promoting coordination, collaboration, and integration of initiatives to develop and implement clinical practice guidelines. Periodically, KDIGO hosts conferences on topics of importance to patients with kidney disease. These conferences are designed to review the state of the art on a focused subject and to ask conference participants to determine what needs to be done in this area to improve patient care and outcomes. Sometimes the recommendations from these conferences lead to KDIGO guideline efforts and other times they highlight areas for which additional research is needed to produce evidence that might lead to guidelines in the future.
Core KDIGO Efforts

- Controversies Conferences
- Clinical Practice Guidelines
- Implementation Task Force
- Research
- Clinical Practice Conferences
- Revision & Updates
KDIGO GUIDELINES

Acute Kidney Injury  March 2012
Glomerulonephritis  June 2012
Anemia  August 2012
Blood Pressure in CKD  November 2012

Hepatitis C  April 2008
Mineral Bone Disorder  July 2009
Transplant Recipient  Oct 2009

Diagnosis & Management of CKD  Jan 2013
Lipid Management  Nov 2013
CKD-MBD Update  July 2017
Living Kidney Donors  August 2017
KDIGO Recent-Meeting

2016
Feb  Gitelman Syndrome  Brussels
June Common Elements in Uncommon KD  Amsterdam
Aug  KDIGO Clinical Practice Conference  Nanjing
Sept Challenges in the Conduct of Clinical Trials in Nephrology  Paris
Oct  CKD & Arrhythmias  Berlin
Dec  Prognosis & Optima Management of Pts with Advanced CKD  Barcelona

2017
Mar. HIV-Related Kidney Diseases  Cameroon
Apr. 1 Executive Committee Meeting: Milan
May 25-28 Heart Failure in CKD Conference: Athens
Sept. 7-10 Blood Pressure Conference: Edinburgh
Oct. 16 Executive Committee Meeting: London
Nov. 16-19 Glomerular Diseases Conference: Singapore
KDIGO Meeting Schedule

**2018**

Jan. 26-28  **Dialysis Initiation & Prescription:** Madrid
Mar. 19     Executive Committee Meeting: San Francisco
Jun. 28/Jul 1 **Coronary Artery and Valvular Diseases:** Vienna
Oct. 1      Executive Committee Meeting: Amsterdam
Oct. 5-7    Electrolyte Disorder: Potassium: Washington DC
Dec. 14-16  Onco-Nephrology Milan

**2019**

Dialysis Complications
Acute Kidney Injury
Nomenclature
Dialysis Innovation
Chronic kidney disease and arrhythmias: Conclusions from a Kidney Disease: Improving Global Outcomes (KDIGO) Controversies Conference

Turakhia MP, Blankestijn PT, Carrero JJ, et al

European Heart Journal 0, 1-17, 2018
Relationship between CKD and Atrial Fibrillation

- **Shared risk factors**
  - Age, male sex, obesity, smoking, low physical activity, hypertension, heart failure, CVD

- **Systemic processes**
  - Inflammation, oxidative stress, fibrosis

- **Detection bias**
  - More exposure to healthcare

- **CKD** → **AF**
- **AF** → **CKD**
- **CKD** → **Detection bias**
- **AF** → **Detection bias**
- **Detection bias** → **CKD**
- **Detection bias** → **AF**
Rates of Sudden Cardiac Death in General, CKD, Heart Failure & HD Populations

- Hemodialysis: Prevalence 5%; Incidence (first year) 7%
- Heart failure: 4%
- Non-dialysis CKD
- GP: < 0.1%

Approximately 1.5 – 2.7%
Mechanisms of Death in CKD Patients

- Sudden (non-cardiac) deaths
  - Stroke
  - Ruptured aneurysm
  - Pulmonary embolism
  - Trauma

- Sudden cardiac deaths
  - Tachyarrhythmia
  - Bradyarrhythmia

- Non-cardiac deaths
  - Ventricular tachycardia
  - Ventricular fibrillation

- Cardiac deaths
  - Asystole

- Non-sudden deaths
  - Dialysis withdrawal
  - Infection
  - Malignancy

- Cardiac, non-sudden deaths
  - MI
  - Heart failure
Predisposing Factors for Sudden Cardiac Death

- LVH fibrosis
- Uremia
- Autonomic dysregulation
- Sympathetic overactivity
- CHF LV dysfunction
- CKD-MBD
- Fluid overload
- Anemia

Arrhythmogenic heart

- Trigger events:
  - Electrolyte fluxes
  - Fluid shifts
  - Myocardial ischemia
  - Dialysis-induced hemodynamic stress

- Cardiac arrhythmia
- Sudden cardiac death
Few RCTs in Nephrology

Number of randomized controlled trials

Archdeacon et al. CJASN 2013
Trials in kidney disease

- Endpoints difficulty
- Difficult patient recruitment
- High dropout
- Burden on patients and sites
- Limited site capacity
- Growing disengagement from community
- Variable regulatory approaches

“If regulatory agencies keep requiring long-term clinical trials, we have to quit developing drugs in this field.”

by a representative from Roche

Courtesy of Prof. M Nangaku
KDIGO Controversies Conference on Heart Failure in Chronic Kidney Disease (#32)
May 25-28, 2017, Athens, Greece
CC Co-chair: Andrew House (Canada)
Peter McCullough (USA)
KDIGO Co-chair:
Chuck Herzog (USA)
Wolfgang Winkelmayer (USA)
KDIGO Controversies Conference on Heart Failure in Chronic Kidney Disease (#32) 2017, May 25-28, Athens, Greece

Co-chair: Andrew House, Peter McCullough
CKD-MBD Implementation Summit in Asia
Apr 28-29, 2018,
CC Co-chair: Masafumi Fukagawa (Japan)
Angela Wang (Hong Kong)
Update on KDIGO methods

• Publish GL online in MAGICapp and a larger print version with more narrative guidance (but no additional recommendations)
• Pilot test of BP, GN and diabetes
• If these pilot tests are successful, gradually convert all existing GL to MAGICapp
• MAGICapp is brought to you by MAGIC, a non-profit organization backed by an international team of doctors and researchers. Our goal is to improve the authoring, adaptation, presentation, dynamic updating, and dissemination of medical guidelines using the GRADE methodology. MAGIC aims to facilitate shared decision making between patients and providers. This is accomplished by developing decision aids and using guidelines directly in EHRs and decision support systems, all with structured data.

SONG: Standardized Outcome in Nephrology