



Mortality during first and second waves of COVID-19 pandemic in dialysis patients and kidney transplant recipients

Presenter: Priya Vart, PhD

Univeristy Medical Center Groningen, Groningen, The Netherlands

Kitty J Jager¹, Miha Arno², Raphaël Duivenvoorden³, Casper F M Franssen⁴, Marc Groeneveld⁵, Marc H Hemmeler⁶, Fanny Lepeyre⁷, Thomas Malfait⁸, Karsten Midtvedt⁹, Sandip Mitra¹⁰, Carme Facundo¹¹, Marlies Noordzij⁴, Carlos C Reina¹², Seda Safak¹³, Nestor Toapanta¹⁴, Luuk B Hilbrands³, Ron T Gansevoort⁴

¹ERA Registry, Amsterdam University Medical Center, The Netherlands; ²University of Ljubljana, Ljubljana, Slovenia; ³Radboud University Medical Center, Nijmegen, The Netherlands; ⁴University Medical Center Groningen, University of Groningen, Groningen, The Netherlands; ⁵Haaglanden Medical Center, the Hague, the Netherlands; ⁶Maastricht University Medical Centre; University Maastricht, Maastricht, Netherlands; ⁷Claude Galien Hospital Ramsay santé, Quincy-sous-Sénart, France; ⁸AZ Delta, Roeselare, Belgium; ⁹Oslo University Hospital – Rikshospitalet, Oslo, Norway; ¹⁰Manchester Academy of Health Sciences Centre, University of Manchester, UK; ¹¹Fundació Puigvert, Barcelona, Spain; ¹²Toledo University Hospital, Toledo, Spain; ¹³Istanbul University, Istanbul, Turkey; ¹⁴Vall d'Hebron University Hospital, Barcelona, Spain

Background



- General population data from several countries suggested lower case-fatality rates in the second wave compared with the first wave.
- Proposed explanation for lower case fatality during the second wave included: increased identification of young individuals with COVID-19, increased identification of more mild and asymptomatic cases, and better management of COVID-19 patients during the second wave.
- Given the high rates of mortality in dialysis patients and kidney transplant recipients, we investigated mortality in the first and second pandemic waves in these patients.
- We also examined potential reasons for any differences in mortality between the two waves.

Methods



Data source: the European Renal Association COVID-19 Database (ERACODA)

- Data voluntarily reported on outpatients and hospitalized patients by physicians responsible for their care.
- Data recorded by approximately 225 physicians representing over 140 centers in about 35 countries, mostly in Europe

Study population: Adult (age ≥ 18 years) kidney transplant recipients and dialysis patients with COVID-19 who presented between March 1st, 2020 & February 28th, 2021.

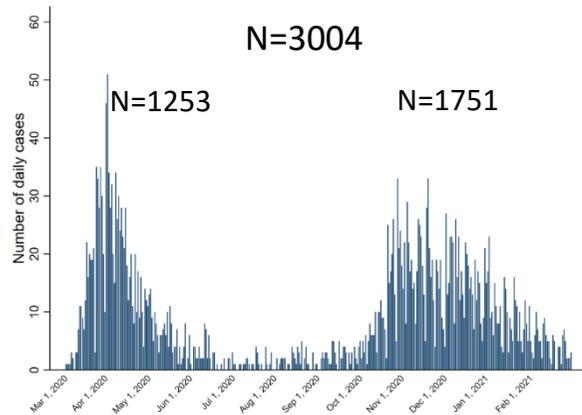
Independent variable of interest: Pandemic wave (first vs. second)

August 1st, 2020 was set as a cut-off for dividing the first and second wave

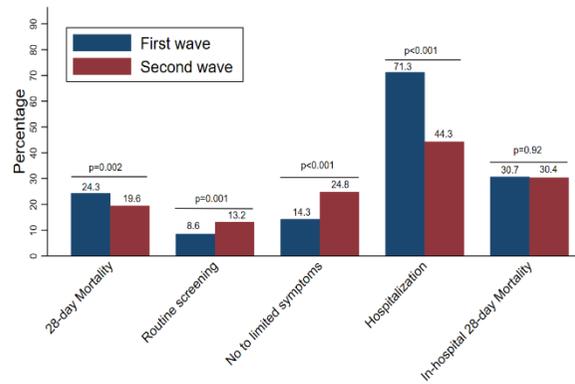
Outcome: 28-day mortality

Statistical analysis: Multivariable Cox regression analysis

Results



Dialysis patients



Total

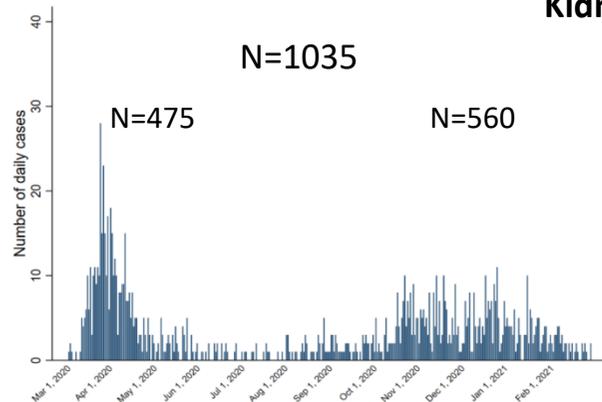
Crude: 0.77 (0.66, 0.89)

Fully adjusted: 0.93 (0.79, 1.10)

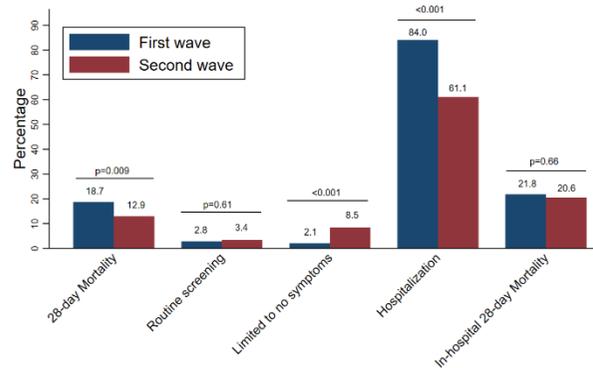
In hospital

Crude: 0.94 (0.79, 1.12)

Fully adjusted: 0.88 (0.74, 1.05)



Kidney transplant recipients



Total

Crude: 0.66 (0.48, 0.90)

Fully adjusted: 0.95 (0.68, 1.33)

In hospital

Crude: 0.92 (0.67, 1.26)

Fully adjusted: 0.97 (0.69, 1.36)

Adjusted for: age, sex, the reason for screening, presence of no to limited symptoms, smoking, hypertension, diabetes mellitus, chronic lung disease, heart failure, chronic artery, cough, shortness of breath, fever, sore throat, O₂ saturation, pulse, temperature, systolic blood pressure, diastolic blood pressure, lymphocytes, c-reactive protein, hospitalization

Conclusions



- Among dialysis patients and kidney transplant recipients with COVID-19,
 - 28-day mortality rates were lower in the second wave compared with the first wave.
 - a greater proportion of patients with minimal symptoms possibly explain the lower mortality during the second wave.
 - Any improvement in patient management during the second wave may not be the main reason for lower mortality during the second wave.

Acknowledgement



Contributors: We thank all contributors that entered information in the ERACODA database for their participation, and especially all healthcare workers that have taken care of the included COVID-19 patients.