

COVID-19 mortality alarmingly high in dialysis patients

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Spain is one of the European countries besides the UK and Italy that was particularly hard hit by the coronavirus pandemic in March. Early on, it was not possible to predict the extent of the outbreak. The first case in Spain was a German tourist who brought the virus to La Gomera in the Canary Islands at the end of January; a second case, this time a British tourist, was identified on Mallorca on February 10. Three days later, the first patient in Spain died of COVID-19 (however it was diagnosed later on postmortem)- followed by a rapidly rising death toll. By the end of March, there were more than 238,000 confirmed cases and 29,000 deaths in Spain, out of a total population of almost 47 million. The UK, with a total population of 66 million, had 38,000 deaths at that time, while Italy, with 60 million, had more than 33,000 deaths.

On March 31, 789 COVID-19 patients were receiving treatment at the Hospital Vall d'Hebron in Barcelona, 168 of them on the ICU. But what were the outcomes among end-stage renal disease/ESRD patients ([dialysis patients](#) and transplanted patients)? At what rate did they fall ill and what was their prognosis?

At the Opening Conference of the ERA-EDTA Congress, Dr. Maria Jose Soler Romeo presented data gathered at the Hospital Vall d'Hebron. Of 400 [dialysis](#) patients with the Vall d'Hebron as a reference hospital, 21 or a good 5% had COVID-19. In the whole of Spain, 238,000 out of 47 million people (about 0.5%) had contracted the disease at that time. The figures obtained from the Hospital Vall d'Hebron on the incidence of COVID-19 are not representative, of course, as it is only one center,

but they do indicate a significantly higher rate of infection for dialysis patients. Of the 21 dialysis patients who contracted COVID-19, 15 were discharged, one was on the ICU at the time of the survey, and five had died. The mortality rate in this center was 24%. This high death rate among infected dialysis patients was also verified in an analysis of the Spanish COVID-19 Dialysis/Transplantation Registry, which included a total of 1572 ESRD patients, including 998 HD patients, 51 PD patients and 523 kidney transplant patients. The mortality rate among HD patients was more than 27% for the whole Spain, but was also more than 23% for kidney transplant patients. PD patients had a significantly lower mortality rate of 15%, but their number is so small in proportion that it is almost impossible to make statistically valid statements about this patient group.

The [high mortality rate](#) among dialysis patients was also verified in a study that monitored the course of disease in 36 HD patients between March 12 and April 10 in Hospital Gregorio Marañón in Madrid. The death rate here was as high as 30.5%, but what is particularly interesting about this study is that it analyzed predictors of mortality. The conclusion was that, in addition to patient older age and pneumonia, there are three factors that significantly influence the mortality rate among coronavirus-positive dialysis patients: (1) the number of years on dialysis (dialysis vintage), (2) lymphopenia, which describes a low number of special white blood cells (lymphocytes) that protect the body from infections, and (3) elevated LDH levels, a surrogate for tissue damage.

"What we had to learn from nephrologists in Spain is that dialysis patients are more susceptible to the virus and that the risk of patients dying is very high at a rate of 1:4. These patients need special protection. Many studies have shown that even people without symptoms or with asymptomatic symptoms can carry and pass on the virus. In dialysis units, therefore, we cannot rely on always being able to detect infected

patients and to isolate them in time. To protect our highly vulnerable patients, it is essential that all the patients and staff be tested on a regular basis in order to minimize the risk of infection in COVID-19 outbreaks. We must continually remind ourselves that, of four [coronavirus](#)-positive dialysis patients, one will not survive. Outbreaks in dialysis units must therefore be prevented at all costs", Dr. Soler concluded.

More information: Marian Goicoechea et al. COVID-19: clinical course and outcomes of 36 hemodialysis patients in Spain, *Kidney International* (2020). [DOI: 10.1016/j.kint.2020.04.031](https://doi.org/10.1016/j.kint.2020.04.031)

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