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Letter to the Editor

LETTER TO THE EDITOR

COVID-19 vaccine acceptance among haemodialysis patients: a French survey

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Compelling evidence has shown that chronic kidney disease (CKD) is not only the most prevalent comorbidity associated with severe coronavirus disease 2019 (COVID-19), but also a condition that conveys the highest risk of death among infected patients [1]. Urgent calls have been made by leading working groups in order to grant these patients priority access to vaccination [2, 3]. French health authorities implemented a priority vaccine program for haemodialysis patients [4], leaving only one major barrier for successful mass vaccination: vaccine hesitancy. Here we report COVID-19 vaccine acceptance from six maintenance haemodialysis centres located in Lyon, France.

Our study consisted of a paper survey distributed to all patients during their haemodialysis session. Participants were asked whether they were in favour of COVID-19 vaccine (including whether they were already vaccinated or willing to be) or against it. In case of refusal, further questions aimed to assess possible reasons. Further information was collected using scale-type answers for patients to self-estimate their health status and risk of being infected. Vaccine hesitancy was evaluated according to the World Health Organization definition [5, 6] as a positive answer to at least one of the following questions: (i) Have you ever refused a vaccine for yourself or a child because you considered it as useless or dangerous? (ii) Have you ever postponed a vaccine recommended by a physician because of doubts about it? and (iii) Have you ever had a vaccine for a child or yourself despite doubts about its efficacy? Patients were asked if they received influenza vaccination in the early winter of 2020.

A total of 159 patients completed the form, mostly men (66%) >65 years of age. About 20% of the responders declared that they already had a positive test for the COVID-19 infection and half met the criteria for vaccine hesitancy. A total of 79.9% of patients were in favour of COVID-19 vaccine: 30.2% were already vaccinated and 49.7% were willing to be as soon as possible. Vaccine refusal was expressed by 20.1% of patients and was supported by fears concerning quality (84%), side effects (84%) and inefficacy (90%) of the vaccine. Unexpectedly, having a personal or familial history of COVID-19 infection, a self-perception of poorer health or high risk to develop severe COVID-19 infection was not associated with vaccine acceptance. Among tested parameters, vaccine acceptance was significantly higher in older patients and was associated with flu vaccination the same year ($P < 0.001$; Table 1).

This study shows for the first time in Europe an important adherence to COVID-19 vaccine among dialysis patients despite a manifested hesitancy towards vaccination. Many of the

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Table 1. Patient characteristics

Characteristics	Total population ($N = 159$)	Vaccine acceptance [$n = 127$ (79.9%)]	Vaccine refusal [$n = 32$ (20.1%)]	P-value
Male, *n* (%)	105 (66)	84 (66)	21 (66)	1
Age (years), *n* (%)	20 (13)	10 (8)	10 (32)	<0.001
<50	39 (24)	28 (23)	11 (34)	0.23
51–64	100 (63)	89 (69)	11 (34)	0.02
>65				
Dialysis vintage (years), *n* (%)	85 (54)	69 (54)	16 (52)	0.79
<3	42 (26)	32 (25)	10 (32)	0.43
Between 3 and 5	32 (20)	26 (21)	6 (16)	0.99
>5				
Prior COVID-19 infection, *n* (%)	29 (18)	23 (18)	6 (18)	1
COVID-19 infection in the entourage, *n* (%)	49 (31)	39 (31)	10 (31)	1
Vaccine hesitant, *n* (%)	75 (47)	58 (45)	17 (53)	0.56
Influenza vaccination this season, *n* (%)	121 (76)	108 (85)	13 (40)	<0.001

Comparisons between the two groups (vaccine acceptance and refusal) were assessed with a chi-squared test. $P < 0.05$ was considered significant.

patients who underwent the survey reported their dialysis medical team as the most reliable source of information concerning COVID-19 vaccination. Medical guidance should be offered to support their decision on reliable grounds.

In a study published in January 2021, in a single US haemodialysis centre, only 49% of patients declared being in favour of COVID-19 vaccination. We hypothesized that the higher vaccine acceptance in Europe might be due to a better awareness of the population of the severe consequences of the pandemic in the absence of an effective vaccination schedule. As in the present work, acceptance of COVID-19 vaccination was associated with prior influenza vaccination [7]. A difference between the percentage of patients in favour of vaccination and the percentage of patients actually vaccinated was expected because of a reporting bias inherent to this type of study. Moreover, potential temporary medical contraindications might delay vaccine administration in some patients.

One of the biggest factors in limiting the spread of severe acute respiratory syndrome coronavirus 2 is achieving herd immunity. At least 50% of the population needs to become immune in order to diminish viral circulation [8]. Our data prove that 'micro-environments' of acquired herd immunity are achievable in high-risk population of haemodialysis patients. Haemodialysis units that reach the threshold of 80% vaccinated patients might in the future be considered as COVID-19-free units.

In conclusion, an important percentage of our haemodialysis patients accept COVID-19 vaccination despite a high prevalence of vaccine hesitancy. The medical team should play a key role to properly guide and inform dialysis patients in this process.

CONFLICT OF INTEREST STATEMENT

The authors have no conflicts of interest to declare.

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