Preventive measures in haemodialysis centre of Policlinico Milan during COVID-19 Epidemic

Since the very beginning of COVID cases in Lombardy (22nd of February) at our in-hospital dialysis centre we adopted the following pro-active measures to avoid/contain COVID19 diffusion among dialysis patients:

1) All patients and their relatives or caregivers have been invited to maintain social segregation at home, avoiding social contacts except those strictly necessary (food and housekeeping supplies, transport to dialysis centre). We also gave them written explanations about how to wash properly their hands (more often than that they were used to do and especially after being outside) .

2) We recommended all patients to wear a surgical mask (provided by us) in presence of other people and mandatory during their transport and during their stay at the dialysis centre.

3) Daily, dialysis nurses are calling patients before the scheduled dialysis section (evening or morning before) in order to investigate whether they have had respiratory symptoms or fever at home.

4) All dialysis staff (doctors, nurses, cleaners, transporters etc) was instructed to use surgical masks during their stay at the centre and/or at any time when contacting a dialysis patient . They were also requested to report respiratory symptoms or fever to the designated authorities of the hospital in order to decide whether they can be admitted to work or not (with or without COVID19 swab) .

5) All accesses to dialysis centre were locked and we adopted new entry codes to reduce the improper transits of caregivers and other unauthorized people. The waiting room at the entrance of the centre has been refurnished in order to maintain a suitable interpersonal distance of at least 1 meter while sitting, before entering dialysis room. The access to the common patients' dressing-room has been regulated in order to avoid over crowding. Body temperature is measured in each patients at the time of arrival to the centre with a thermo-scanner in order to avoid starting dialysis in febrile patients before their medical evaluation (see point 7) .

6)
Symptomatic patients, before entering dialysis room, are evaluated by the nephrologist with the remote consultation of the infectious disease specialist, to decide whether they need to be submitted to a diagnostic swab. The diagnostic swab is performed by trained personnel and using appropriated instruments of self protection of the operator (filtering masks, impermeable gowns, cuffs, gloves, protective glasses etc etc).
- a) Whenever possible, the dialysis section is postponed waiting for the result (4-6 hours).
- b) If the clinical conditions prevent us from postponing the section we will dialyse these patients in a dedicated room of the facility (room with a locked door, with a negative pressure, where the personnel have adequate instruments for self protection). The room and instruments are cleaned and disinfected after any dialysis section of a suspected COVID+ patient .

7) Patients with negative COVID swab are followed for their symptoms and readmitted to dialyze with the asymptomatic patients. COVID positive patients are assessed at the positive COVID Emergency Unit to decide whether they deserve hospitalization or not. For Covid19 positive patients who do not need hospitalization, they usually return home after dialysis with mandatory recommendations for a strict isolation from their family members (this is a weak point!).

Transportation from home to dialysis centre is accomplished by a transport mean dedicated to COVID positive patients.

8)
Simultaneously, we have arranged two COVID positive dialysis areas that ARE physically separated (with different tracks) from the common dialysis facility and furnished with appropriated self protection instruments.

a) area A is designated to treat patients with mild-moderate symptoms without respiratory insufficiency

b) area B is designated to patients that need of Not Invasive Ventilation (NIV) and it is set up at the COVID sub-intensive care unit using two portable inverse osmosis devices and two dedicated dialysis monitors

In order to contain the diffusion of the infection we have dedicated a selected group of nurses to follow these patients.

We still have more than some unresolved issues:

1) We are not still authorized to perform periodical swabs in asymptomatic individuals thus we can not identify and isolate asymptomatic carriers.

1) Given the current emergency we do not have a clear projection of the number of patients who develope AKI III , who need CRRT , in the intensive care units that have been opened around the hospital and that may deserve to continue dialysis once they will have recovered from the respiratory insufficiency

In our 125 HD and 42 PD patients , up to now, we performed 12 swabs in those with symptoms (mostly fever, cough, breath shortness)Of them 4 were positive. Three of these patients were on HD and one on PD; 2 of the HD patients were febrile with mild-moderate respiratory symptoms but without pneumonia (they are currently dialysed in the area A and go back home after treatments) , the third patient on HD and the one on PD, who needed NIV, have been dialysed in area B (unfortunately the patient on PD was first shifted to HD and eventually died 1 week after hospitalization)