Gioacchino Li Cavoli*, Camillo Carollo, Barbara Oliva, Antonio Amato, Rosa Anna Turdo, Vitalba Azzolina, Rosalia Mongiovì, Flavia Caputo

Nephrology Dialysis and Renal Transplant Department, Civico and Di Cristina Hospital, Palermo, Italy

* *Corresponding author.*
E-mail address: gioacchinolicavoli@libero.it (G. Li Cavoli).

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Chemotherapy and dialysis: A challenge☆

Quimioterapia y diálisis: un reto

Dear Editor,

With a population of more than 4 million patients, Spain is one of the European countries with the highest prevalence of chronic kidney disease. Of that population, 31,735 are on renal replacement therapy, either on kidney transplant programmes, peritoneal dialysis or haemodialysis (HD); 23,709 are in the HD group, and more males are affected than females.[1] The causes of end-stage renal disease (ESRD) are multiple (diabetes, glomerulopathies, vascular diseases, etc.); in these patients, replacement therapy has shown benefits and increased life expectancy.[2]

Cancer is one of the main causes of morbidity and mortality in Spain. It is predicted that 315,413 new cases will be diagnosed by 2035.[3] Chemotherapy is a standard systemic treatment for cancer, the efficacy of which has been reported in randomised studies, where an improvement in patients' disease-free time and survival has been demonstrated. However, the majority of clinical trials demonstrating the efficacy of chemotherapy include populations with normal renal function.[4]

In this context, it is now more common to find patients with kidney disease who develop cancer and vice versa.[4] This has led to the importance of involving Nephrology and Oncology being assessed in recent years.[2]

There is a higher incidence of cancer in HD patients compared to controls[2] and urogenital cancers have been found to be the most prevalent in this population.[4,5] A recent epidemiological study examined the causes of death in patients on renal replacement therapy and found cancer to be the third leading cause, at 20%, after cardiovascular events and infections.[2,5] Carcinogenesis in patients with HD could be explained by the increase in chronic oxidative stress, which damages cell structures, the alteration of the cellular immune system, exposure to viral infections and the medications administered in these patients.[6,7] Alternatively, the increased incidence of cancer may be related to screening in kidney transplant programmes.[2]

Chemotherapy is not contraindicated in patients with ESRD on replacement therapy. However, as described by Funakoshi et al. in a retrospective study of 675 patients,[4] these patients are reported to have a high mortality rate due to causes other than cancer compared to non-dialysed patients. The CANDY (CANcer and DialYsis) multicentre study studied anti-cancer treatment in patients on long-term HD. This study reported that 88% of the patients required specific management of the cytotoxic drug, 44% developed iatrogenic toxicity in relation to inappropriate dose adjustment due to the lack of management recommendations in this specific group of patients, and overdose of chemotherapy drugs was more often associated with haematological, gastric and neurological side effects.[2] As renal excretion plays an important role in the elimination of anti-cancer agents, renal failure can lead to accumulation of the drug, which increases toxicity.[8] In contrast, some reports point to a reduction in neurotoxicity in patients with non-Hodgkin's lymphoma on chemotherapy and renal failure requiring HD.[9]

The current challenge is to establish the role of the nephrologist when our patients on HD or with acute kidney injury are indicated chemotherapy. First of all, it must be borne in mind that each patient has a unique context: type of cancer; clinical stage; performance status; and a type of drug indicated with established doses and specific pre- or post-HD administration time.

In day-to-day practice, the clinical course of these patients is complex in view of the lack of evidence in the literature on the management of cytotoxic drugs in patients with ESRD on HD; the optimal time for administration, dose adjustments depending on the size of the molecule and pharmacokinetic behaviour are poorly understood. There are a few case series and scarce expert opinions that fail to reach a consensus on this subject and this is reflected in the small number

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of retrospective systemic reviews of certain chemotherapy drugs which have aimed to assess their pharmacokinetics and pharmacodynamics.[10]

In conclusion, we are going to find an increasing number of patients with ESRD and cancer who require systemic treatment with cytotoxic drugs. In this scenario, we need to understand the pharmacology of chemotherapeutic agents in representative populations of patients with ESRD on HD, evaluate the characteristics of each molecule and prevent non-renal toxicity due to pharmacokinetic modifications of anti-cancer drugs. We also need to prevent early drug elimination in the dialysis process without altering their therapeutic efficacy. We believe that this is an important subject and there is still much to discuss: therapeutic algorithms, the type of dialysis to indicate and the efficacy and toxicity of anti-cancer drugs, all of which will have an impact on the survival of our patients.

Conflicts of interest

The authors declare that they have no conflicts of interest.

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Carolt Arana Aliaga[a,*], Jorge Luna-Abanto[b,c]

[a] *Fundació Puigvert, Barcelona, Spain*
[b] *Instituto Nacional de Enfermedades Neoplásicas, Lima, Peru*
[c] *Escuela de Posgrado, Universidad Peruana Cayetano Heredia, Lima, Peru*

[*] *Corresponding author.*
E-mail address: aranacaro100891@gmail.com
(C. Arana Aliaga).

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Facial crusted scabies on renal transplant patient

Sarna costrosa facial en paciente con trasplante renal

Dear Editor,

Crusted Scabies (Norwegian Scabies) is a rare and severe presentation of the skin infestation caused by the mite *Sarcoptes scabiei* (*var. hominis*) in patients with cellular immunity compromised. Affected patients may present thousands of parasites on the skin surface. Due to impaired immune response, manifestations may occur in a atypical pattern and pruritus may be mild or absent, which can lead to late diagnosis and worse prognosis.[1–4]

A female 47-year-old renal transplant recipient (transplant 16 years ago), with chronic graft nephropathy was admitted in our hospital with asymptomatic lesions on face for one year. She was taking cyclosporine, mycophenolate and prednisone and was hospitalized due to acute respiratory infection and decompensation of baseline nephropathy.

On dermatological examination, she presented erythematous-scaly plaques with greyish-yellow crusts on malar regions, ears, dorsum nasi and supralabial region

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