

## PERITONITES IN PERITONEAL DIALYSIS PATIENTS: RISK FACTORS.

Emanuelle B. D. Tomaz\*, Gabriela J. T. Alves, Rodrigo B. Oliveira, Plínio Trabasso.

### Abstract

Peritonitis is one of the most common complications of the population with chronic kidney disease on peritoneal dialysis. The most frequent etiological agents are bacteria and fungi, the latter being responsible for 2 to 5% of the total cases of this type of infection. Fungal peritonitis is severe and its occurrence requires immediate removal of the catheter and transfer of renal replacement therapy for hemodialysis. The present study aimed to retrospectively study the risk factors and clinical outcomes of patients at the Centro Integrado de Nefrologia (CIN) of the Hospital das Clínicas da UNICAMP, who presented bacterial or fungal peritonitis, comparing them to peritoneal dialysis patients who did not present peritonitis.

### Key words:

chronic kidney disease, peritoneal dialysis, peritonitis.

### Introduction

Chronic Kidney Disease (CKD) has a high prevalence and high mortality in patients with advanced or dialytic disease. Renal transplantation, hemodialysis (HD), or peritoneal dialysis (PD) are required in these cases. In relation to PD therapy, a common complication is peritonitis. Its risk factors are: antisepsis (especially of the hands), colonization and infection of the catheter exit site, connection methodology, technique errors and prolonged use of antibiotics. The most common agents of this type of infection are bacteria and fungi, the latter being responsible for 2 to 5% of the total cases of peritonitis. In most cases, fungal agents belong to the genus *Candida spp.* The fungal peritonitis is severe, with high mortality and its occurrence requires immediate removal of the catheter and transfer of the patient to HD. This study sought to understand the risk factors associated with the development of fungal peritonitis, in a comparative way to patients with PD who did not present peritonitis or who had it for bacteria.

### Results and Discussion

Of the 25 patients evaluated, the 6 patients who did not present peritonitis constituted the "control group" and the 19 who presented peritonitis, either bacterial or fungal, constituted the "Peritonitis Group". Comorbidities such as diabetes *mellitus* and dyslipidemia were more prevalent in patients in the peritonitis group. Regarding the etiology of CKD, 8 patients in the peritonitis group had systemic arterial hypertension as the main cause of the disease, whereas in the control group, no patient presented SAH as an etiological factor for CKD. The main etiological agent of bacterial peritonitis was *Staphylococcus aureus* corresponding to 4 cases, while *Candida spp.* was responsible for all cases of fungal peritonitis. Among the laboratorial criteria, serum calcium showed a statistically significant difference ( $p = 0.046$ ) between the control and peritonitis groups, in which patients with lower calcium and parathyroid hormone (PTH) had more peritonitis. In patients with CKD, changes in mineral metabolism occur, leading to serum calcium and PTH imbalance and the development of hyperparathyroidism secondary to renal disease. This may be a risk factor, although we did not detect a statistically significant difference between PTH levels. Other risk factors associated with the development of fungal peritonitis in PD patients include previous

episodes of bacterial peritonitis and previous broad-spectrum antibiotic therapy. Regarding the clinical outcomes of the 19 patients 6 had removed the Tenckhoff catheter during the treatment of the infection, 4 removed posttreatment and 8 presented the need to change the method to HD at 6 months. In addition, all patients in the fungal peritonitis subgroup underwent a change from the PD to HD method.

### Conclusions

Peritonitis, especially of fungal agents, is a serious complication of the PD method, whose main observed risk factors involve aspects of hand antisepsis and the training of the patient to perform the dialysis. It is therefore necessary to devote special attention to hygiene and care with the catheter outlet site in order to reduce the incidence of this very common and serious complication.

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