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Early clinical manifestation of type 5 cardio-renal syndrome in patients with type 2 diabetes and hypertension

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Introduction: The cardio-renal syndrome (SCR) type 5 is characterized by the simultaneous presence of cardiac and renal dysfunction associated to acute or chronic systemic disorders. The detection in early stages is difficult because of the complexity pathophysiological in addition that the majority of patients are often oligo-symptomatic.

Methods: Study longitudinal, observational and cross-sectional study, conducted in a community in the state of Mexico. We studied patients of 82 years with diabetes and/or hypertension ≥5 years of evolution without kidney or heart disease is somatometrics and biochemical parameters were analyzed. The results are presented as simple frequencies and proportions for categorical variables, and as mean ± standard deviation for scalar variables. The correlations were analyzed using the Student t-test (95% CI).

Results: 30 patients (mean age 57.3 [33-82] years) were studied, 18 were women (60%), 26 patients had a diagnosis of DM/Hypertension, 20 patients presented some type of dyslipidemia. 15 patients (50%) had higher levels of HbA1c above the therapeutic goal (≤6.5%), 9 patients (30%) fulfilled the therapeutic goal of glucose (90-130 mg/dL). The HbA1c level declined 1.93% of the total population and increased 3.92% in patients with DM/Hypertension. The plasma levels of creatinine levels were 0.87±0.20 mg/dL with an increase of 10.34%. The GFR estimated average was 94.06±21.80 mL/min/1.21m2 showing a decrease of 11.15%. The average RR interval was significantly shorter (845±98.82 ms) and corrected QT interval (QTc) longer (428±24.34 ms) in patients with DM. The estimated GFR showed a progressive decrease in spite of the reduction of HbA1c ($p=0.03$). The estimated GFR showed a directly proportional relationship to the QTc interval showing an increase for both variables of 14.03% and 10.61%, respectively ($p=0.03$).

Conclusions: Early clinical manifestations are nonspecific in these diseases, however, in our study group renal alterations were more frequent, and the progressive renal failure in our population was independent to the adequate metabolic control, being able to infer that the kidney damage precedes the heart damage in patients with diabetes and/or hypertension.

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