

# THE PREVALENCE OF CARDIORENAL SYNDROME AND ITS RELATION WITH METABOLIC SYNDROME IN HEMODIALYSIS PATIENTS

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## Purpose :

Most of the hemodialysis population suffers from cardiovascular disease, so cardiorenal syndrome (CRS) which comprising both cardiac and renal disease is very common among this group of patients. In the other hand metabolic syndrome (MS) is an important risk factor for both cardiac and renal dysfunctions. The aim of the study is to evaluate the present of CRS and its relationship with MS in hemodialysis patients.

## Methods :

One hundred twenty three hemodialysis patients of University Hospital Center were enrolled in the study: 74 patients were males (60.2 %) and 49 patients were females (38.9%). The mean age was  $52.63 \pm 12.8$  years, and the time of beginning hemodialysis  $3.7 \pm 2.3$  years. The CRS was defined in according to consensus conference of the Acute Dialysis Quality Initiative .The MS was defined according to International Diabetes Federation (IDF).

## Results :

The prevalence of CRS was 82.1% (101 patients). According to type of SCR we found; type 2 of SCR 0.8% (1 patient), type 3 of SCR 15.4% (19 patients), type 4 of SCR 63.4% (78 patients), type 5 of SCR 2.4% (3 patients). 48.8% were males patients (60) vs. 33.3% females patients (41) ( $p < 0.71$ ). The mean age was  $44.06 \pm 15.21$  years, comparing with patients who were not with CRS  $54.97 \pm 11.2$  years ( $p < 0.01$ ). The time of beginning hemodialysis for CRS patients was  $4.67 \pm 2.47$  years and for patients without CRS was  $3.5 \pm 2.33$  years ( $p \leq 0.09$ ).

The prevalence of MS according to IDF definition was 48% (59 patients): 40 were males (32.5%) vs. 19 females' patients (15.4%) ( $p \leq 0.097$ ). The mean age was  $56.98 \pm 10.7$  years comparing to patients without MS  $48.07 \pm 13.443$  years ( $p < 0.001$ ). The time of beginning hemodialysis for MS patients was  $3.58 \pm 2.119$  years and for patients without MS was  $3.8 \pm 2.63$  years ( $p < 0.593$ ). We found a strong relationship between CRS and MS by using chi-square test. According to our study 46.3 % (57 patients) had both CRS and MS vs. 35.8% (44 patients) who had only CRS ( $p < 0.0001$ ). From a multivariable analysis, the advanced age (44.6% vs. 54.99,  $p < 0.01$ ), the presence of arterial hypertension (43.1% vs. 37.4%,  $p < 0.001$ ), diabetes (16.3% vs. 0.8%,  $p < 0.001$ ), were strongly associated with CRS as well as with MS.

## Conclusions :

The prevalence of CRS is high in our hemodialysis population. The most prevalent is type 4 of CRS. We find a strength relationship between CRS and MS. Hypertension, diabetes and advanced age are significant factors in both syndromes. Hence, knowing better the relationship between these both syndromes will help us to upgrade diet modification and drugs combinations to lower as much as possible the mortality risk in these patients.

