A COUPLE OF DRUGS WITH A POTENTIAL RENOPROTECTIVE EFFECT

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Diabetes Mellitus is the main cause of CKD and consequently a cause of high morbidity and mortality.

Albuminuria is an important marker of disease progression and represents a target of control as well as a support for investigation, in order to find the optimal antiproteinuric drug.

Vitamin D analogues, such as paricalcitol has shown antiproteinuric effect in different animal models through a renin suppression, regulation of inflammation, action on podocytes, and antiapoptotic function.

Other drug which is under investigation attending the possibility of albuminuria reduction is the **dipeptidyl peptidase 4 (DPP4) inhibitors**. Suggested mechanisms for it seems to be the anti oxidative effect and reduction of reactive oxygen species through the up regulation of the renal cyclic adenosine monophosphate (cAMP).

Purpose

The aim of this study is to investigate the **role of paricalcitol and DPP4 inhibitors in type 2 diabetic patients** with renal disease having in mind the albumin-creatinine ratio (**ACR**) at baseline, 3 months and 6 months.

Material and methods

A randomized study included **120 patients**, followed in diabetic nephropathy clinic.

The population was divided into four groups according to the diabetic medication:**G1**= Linagliptin + gliclazide; **G2**=Paricalcitol + DPP4 inhibitors; **G3**=paricalcitol + linagliptin and **G4**= unchanged medication (gliclazide+ metformin).

Continuous variables description, ANOVA and chi-square test were used for comparison between groups. ANCOVA, LSD post-Hoc test.

Results

The mean age of these patients, the gender and the body mass index were similar between groups. The groups presented with different time-evolution of diabetes, with G2 being the group with a shorter time- evolution diabetes 6.8 (±1.6) years, p=0.001 and G3 with the longer time-evolution diabetes 10.6 (±4)years, p=0.001, statistically significant.

	ACR (baseline)	ACR (3 months)	ACR (6 months)	global p	p (baseline- 3 months)	p (baseline-6 months)
G1 Mean (±SD)	257.3 (±119.4)	235.9 (±106.9)	221.6 (±91.4)	<0.001	<0.001	**<0.001**
G2 Mean (±SD)	269.5 (±114.3)	216.4 (±91.2)	182.6 (±74.1)	<0.001	<0.001	**<0.001**
G3 Mean (±SD)	292.8 (±71.5)	265.6 (±88.1)	210.5 (±73.6)	<0.001	0.190	**<0.001**
G4 Mean (±SD)	189.2 (±58.4)	207.5 (±66.2)	255.6 (±88.0)	0.002	0.064	**<0.001**

ACR difference from baseline at 3 months

	mean difference	95% CI	p
G1 vs G2	31.7	-3.7; 67.0	0.078
G1 vs G3	5.8	-29.5; 41.1	0.746
G1 vs G4	-39.7	-75; -4.3	0.028
G2 vs G1	-31.7	-67; 3.7	0.078
G2 vs G3	-25.9	-61.2; 9.4	0.149
G2 vs G4	-71.3	-106.7; -36	<0.001
G3 vs G1	-5.8	-41.1; 29.5	0.746
G3 vs G2	25.9	-9.4; 61.2	0.149
G3 vs G4	-45.4	-80.8; -10.1	0.012

ACRifference from baseline at 6 months

mean difference	95% CI	p
51.3	10.7; 91.8	0.014
46.6	6.1; 87.2	0.025
-102.0	-142.5; -61.4	<0.001
-51.3	-91.8; -10.7	0.014
-4.6	-45.2; 35.9	0.822
-153.2	-193.8; -112.7	<0.001
-46.6	-87.2; -6.1	0.025
4.6	-35.9; 45.2	0.822
-148.6	-189.2; -108.1	<0.001

Conclusions

According to our results, the association of paricalcitol and DPP4 inhibitors revealed a **positive effect on the decrease of ACR.** Nevertheless, more studies should be designed in order to better understand the individual role of each drug. Other question to be addressed is if the improvement of ACR comes together with an improvement of GFR, culminating in a true renoprotective role.

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