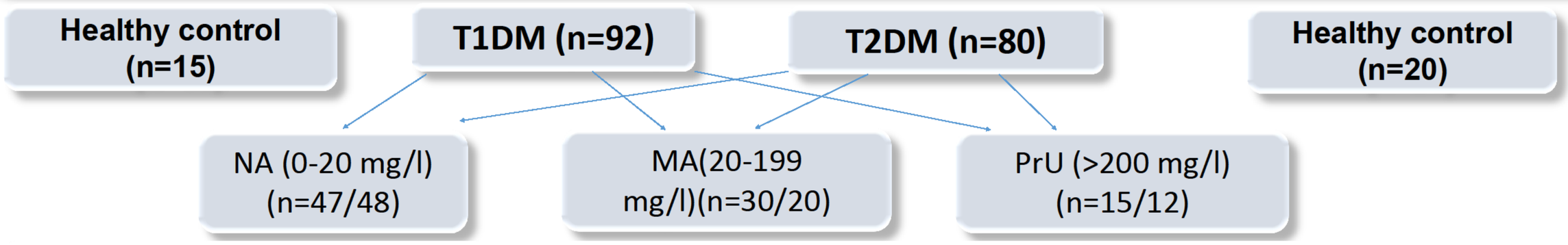
NOVEL BIOMARKERS OF CHRONIC KIDNEY DISEASE IN DIABETIC PATIENTS

Zuraeva Z.T., Mikhaleva O.V., Vikulova O.K., Ilyin A.B., Shamkhalova M.Sh., Shestakova M.V., Dedov I.I.
Endocrinology Research Center, Moscow, Russian Federation

Background and aims: Microalbuminuria (MA) is classical but not precise predictor of chronic kidney disease (CKD) in diabetes. For the purpose to find potential early risk markers we examined a panel of peptides in T1DM and T2DM patients.

Materials and methods:

Overnight AER was assesed by immunoturbidimetry assay.
Biomarkers of kidney damage were measured by enzyme-linked immunosorbent assay ELISA
Plazma biomarkers: **NGAL, KIM-1, TIMP-1, osteopontin, cystatin C**
Urinary biomarkers: **collagen IV, nephrin, podocin, cystatin C, KIM-1, NGAL, uromodulin**

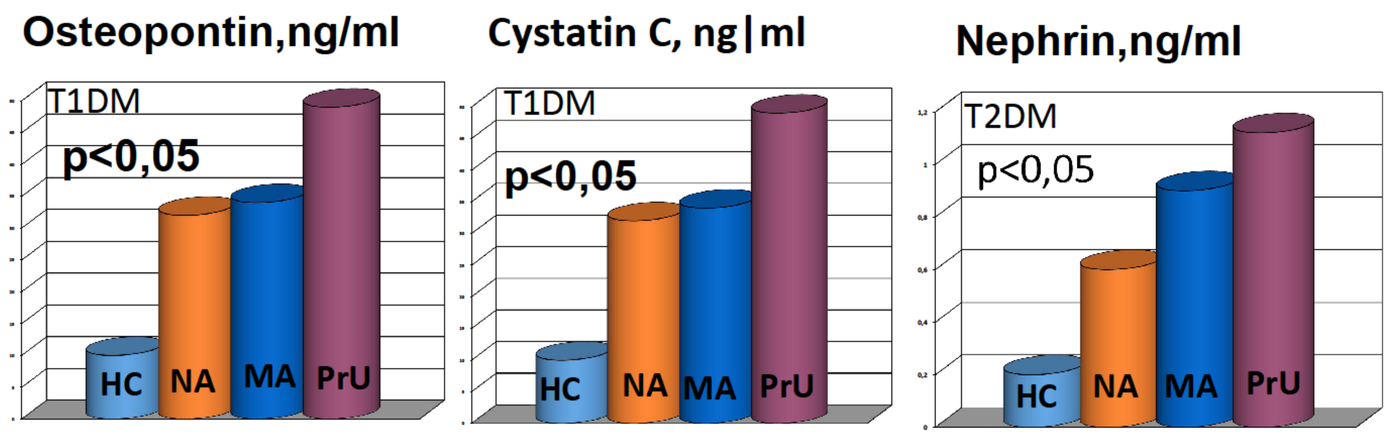


Statistical analyses performed by STATISTICA 8.0, using a Mann-Whitney test, correlations were analyzed using Spearman correlation coefficients. Differences were considered significant at $p<0.05$.

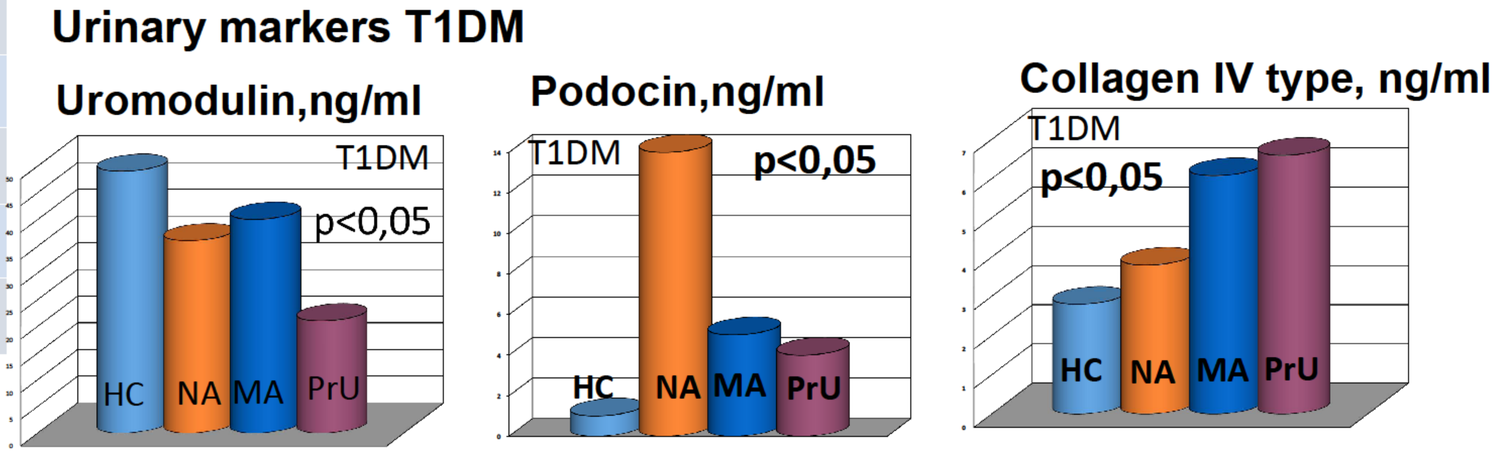
Results:

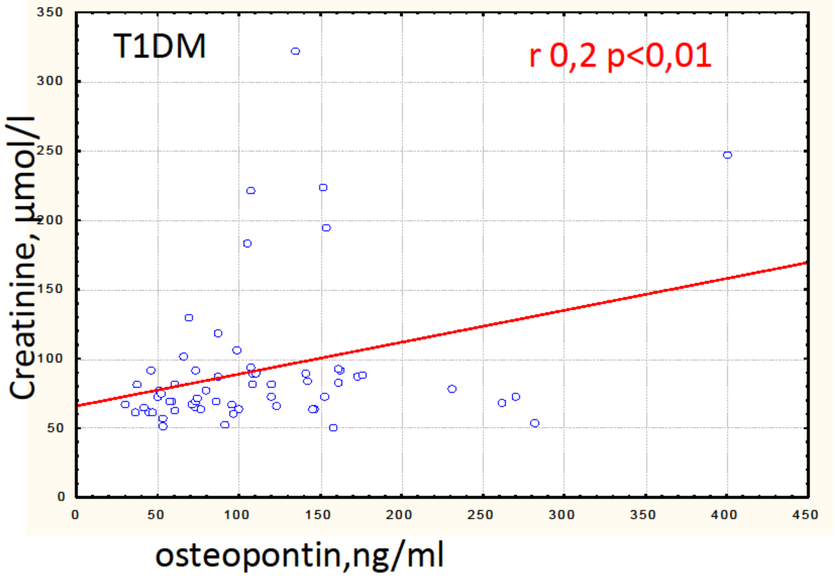
parameter	NA	MA	PrU	p
age (years)	33/63	35/68	31/63	NS
DM duration (years)	14/10	22/15	22/17	NS
Systolic BP /Diastolic BP (mmHg)	120/80 125/80	120/80 130/85	120/70 125/85	NS
HbA1c, %	8,6/8,2	8,5/9,7	8,1/7,2	NS
Creatinine (µmol/l)	75/69	72/73	194/172	
eGFR(ml/min/1.73 m2)	103/90	98/72	36/45	p< 0,05
Uric acid (µmol/l)	270/332	274/421	337/446	p< 0,05
Total cholesterol (mmol/l)	4,8/5,3	4,9/5,1	5,4/5,4	NS

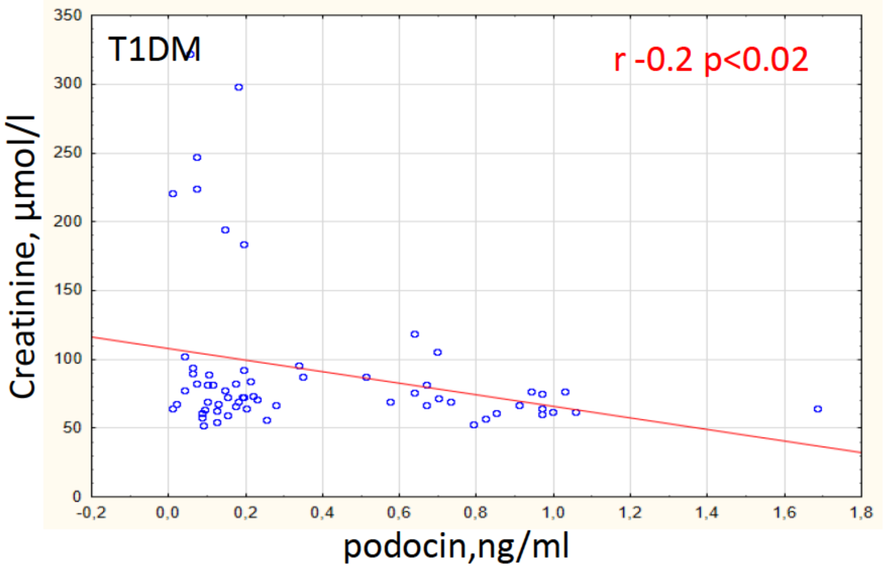
Plazma markers

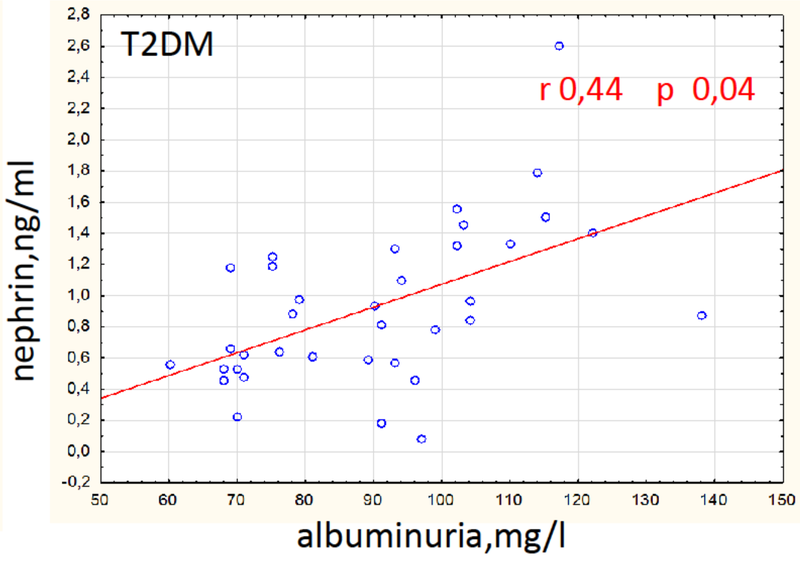


Urinary markers T1DM









CONCLUSION:

The biomarkers observed prior to MA let to consider them as a promising assay for the preclinical diagnostics of diabetic CKD.