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DIABETES - CLINICAL

FP283 | MEAN PLATELET VOLUME AND RELATED FACTORS IN PATIENTS AT DIFFERENT STAGES OF DIABETIC NEPHROPATHY

Kenan Turgutalp[1], Onur Ozhan[2], Esen Akbay[2], Naci Tiftik[3], Turkay Ozcan[4], Sercan Yilmaz[5] and Ahmet Kiykim[5]

[1]Mersin University Division of Nephrology, Department of Internal Medicine Mersin/Turkey, [2]Division of Endocrinology and Metabolism, Department of Internal Medicine, School of Medicine, Mersin University, Mersin, Turkey, [3]Division of Hematology, Department of Internal Medicine, School of Medicine, Mersin University, Mersin, Turkey, [4]Department of Cardiology, School of Medicine, Mersin University, Mersin, Turkey [5]Division of Nephrology, Department of Internal Medicine, School of Medicine, Mersin University, Mersin, Turkey

Introduction and Aims: The level and prognostic value of various cardiovascular biomarkers differ in patients with proteinuria and renal failure. Mean thrombocyte volume (MPV) is an independent cardiovascular disease (CVD) predictor in non-renal patients. The value of this marker in patients with diabetic nephropathy and factors related with this issue has not been investigated yet. The determination of MPV values in patients, which are at different stages of diabetic nephropathy and to compare these values with normal subjects as well as with diabetic subjects not having nephropathy. Also we aimed to find out the associated factors related with MPV

Methods: Totally 621 patients consisting of 4 groups were recruited to this study. Group 1 was the control one consisting of 157 non-diabetic subjects. Group 2 with a number of 160 patients involved the subjects with type 2 diabetes mellitus (DM) which have not shown chronic complications yet. Group 3 with 144 subjects were the diabetic people showing clinical proteinuria (>500 mg/day) where as group 4 which had 160 people were composed of chronic kidney disease patients due to diabetes. For all groups; patients under antiaggregant and/or anticoagulant treatment, subjects with hematological and/or symptomatic cardiovascular disease were excluded from the study. MPV value, platelet count, serum creatinine level, lipid profile, fasting plasma glucose level, proteinuria and microalbuminuria in 24 hour collected urine, glomerular filtration rate (GFR), HbA1c, albumin, parathyroid hormone and demographic values were evaluated.

Results: MPV level was found to be increased in diabetic subjects as the complication rate increased (For all group comparisons p value <0.05). Gender status and smoking did not have effect on MPV values within the groups (p>0.05). While MPV values had positive correlation with the age, serum creatinine, HbA1c, waist circumference, proteinuria and duration of the diabetes, a negative correlation with the GFR was detected (For all parameters p value <0.001, r values; 0.34, 0.39, 0.53, 0.56, 0.42, 0.56 and -0.36 respectively).

Conclusions: MPV values were higher in diabetic groups than normal subjects, and tended to increase with the progression of diabetic nephropathy. HbA1c, waist circumference, proteinuria and duration of the DM were found to be the most powerful determinants of MPV in patients with DM and diabetic nephropathy.

FP284 | COMPARATIVE EFFICACY OF VARIOUS RENIN-ANGIOTENSIN SYSTEM BLOCKERS AND OTHER ANTIHYPERTENSIVE DRUGS IN DIABETIC NEPHROPATHY: A SYSTEMATIC REVIEW AND BAYESIAN NETWORK META-ANALYSIS

Hon-Yen Wu[1], Yu-Sen Peng[1], Jenq-Wen Huang[2], Kwan-Dun Wu[2], Yu-Kang Tu[3] and Kuo-Liong Chien[4]

[1]Internal Medicine, Far Eastern Memorial Hospital, New Taipei City, Taiwan, [2]Internal Medicine, National Taiwan University Hospital, Taipei, Taiwan, [3]Division of Biostatistics, Leeds Institute of Genetics, Health & Therapeutics, University of Leeds, Leeds, UK· [4]Graduate Institute of Epidemiology and Preventive Medicine, National Taiwan University, Taipei, Taiwan

Introduction and Aims: Nephropathy is a common comorbidity in diabetes and has become the leading cause of end-stage renal disease. Debate about whether the protective effects are different between angiotensin-converting enzyme inhibitors (ACEIs) and angiotensin receptor blockers (ARBs) in patients with diabetes nephropathy is still unresolved. In this systematic review, we evaluated the effects of different antihypertensive drugs on major renal outcomes in diabetic patients, by incorporating evidence of direct comparisons with indirect evidence in the Bayesian network meta-analysis.
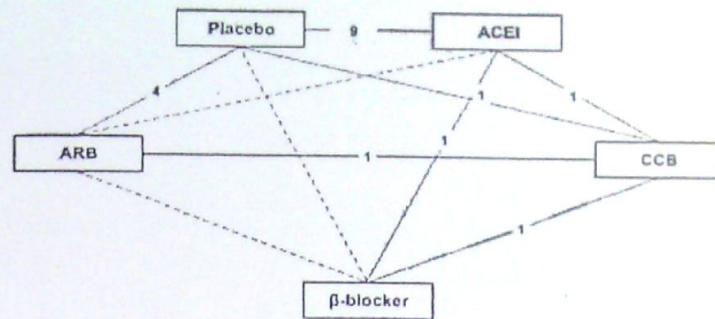
The numbers represent the number of trial groups providing comparison between drug classes. The solid lines represent direct comparisons, and the dotted lines represent indirect comparisons.

FP284 Figure 1: Network of treatment comparisons

FP284 Table 1 Rank order of treatment strategies for doubling of serum creatinine in network meta-analysis.

Rank	Treatment	OR	(95% CrI)
1	ACEI	0.65	(0.37 – 0.96)
2	ARB	0.77	(0.45 – 1.36)
3	Placebo	RE	RE
4	CCB	1.18	(0.55 – 2.70)
5	β-blocker	5.25	(0.85 – 36.78)

NOTE. Placebo is used as the referent agent. Bold numbers denote a statistical significant difference. ACEI, angiotensin-converting enzyme inhibitor; ARB, angiotens II receptor blocker; CCB, calcium channel blocker; CrI, credibility interval; OR, od ratio; RE, referent.

Methods: We systematically searched three electronic databases (MEDLINE, PubMe and the Cochrane Library) between 1970 and Apr, 2011, for randomized clinical trial of antihypertensive drugs (ACEIs, ARBs, β-blockers, and calcium-channel blockers [CCBs]; compared with placebo or each other) with follow-up of at least one year. Eligible studies had to be published in peer-reviewed English-language journals, and reported doubling of serum creatinine among diabetic patients. Bayesian mixed treatment comparisons were applied to estimate the odds ratio (OR) and 95% credible intervals (CrI) to determine the relative effects of each drug.

Results: We identified 14 eligible studies that enrolled 15128 diabetic participants. A total of 1048 cases of doubling of serum creatinine were reported. Figure 1 shows the network of available treatment comparisons. A total of 3430 patients (22.7%) were specifically assigned to the ACEI therapy, 3951 (26.1%) to the ARB therapy, 16 (0.1%) to the β-blocker therapy, and 585 (3.9%) to the CCB therapy. In addition, 7146 patients (47.2%) were randomized to receive placebo. Table 1 shows the pooled estimates for the outcome of doubling of serum creatinine in network meta-analysis. Compared with placebo, ACEIs (OR 0.65, 95% CrI 0.37-0.96) yielded the best significant effect on reducing incidence of doubling of creatinine. The treatment effect of ARBs (0.77, 0.45-1.36) were superior to those of placebo, and the treatment effects of CCBs (1.18, 0.55-2.70) or β-blockers (5.25, 0.85-36.78) were inferior to those of placebo, but the differences were non-significant. ACEIs (0.85, 0.37-1.51) showed superior effects compared with ARBs, but the difference was non-significant. These estimates were fairly robust and changed little in sensitivity analyses.

Conclusions: To the best of our knowledge, this study is the first network meta-analysis performed in patients with diabetic nephropathy, aiming at investigating the efficacy of different antihypertensive drugs in the prevention of doubling of serum creatinine. Our findings support the use of ACEIs as the first-line antihypertensive agent to prevent progression of nephropathy in diabetic patients.

FP285 | PLASMA ADIPONECTIN IS RELATED TO PROGRESSION OF KIDNEY DISEASE IN TYPE 2 DIABETES PATIENTS

Ina Maria Kacso[1], Diana Moldovan[2], Alina Lenghel[2], Crina Claudia Rusu[2] and Mirela Gherman Caprioara[2]

[1]University of Medicine and Pharmacy "Iuliu Hatieganu"Cluj, Cluj Napoca, Romania [2]University of Medicine and Pharmacy "Iuliu Hatieganu" Cluj, Cluj Napoca, Romania