CROATIAN INTERNATIONAL PUBLICATIONS

by Ivan Bohaček
ibohacek@hiim.hr

Adamec I[1], Crnošija L[1], Junaković A[1], Krbot Skorić M[1], Habek M[2]. Progressive multiple sclerosis patients have a higher burden of autonomic dysfunction compared to relapsing remitting phenotype. Clin Neurophysiol. 2018;129:1588-1594.

[1]University Hospital Center Zagreb, Department of Neurology, Referral Center for Autonomic Nervous System Disorders, Zagreb, Croatia; [2]University Hospital Center Zagreb, Department of Neurology, Referral Center for Autonomic Nervous System Disorders, Zagreb, Croatia; School of Medicine, University of Zagreb, Zagreb, Croatia

OBJECTIVE: To determine autonomic dysfunction (AD) differences in patients with relapsing remitting multiple sclerosis (pwRRMS) and progressive MS (pwPMS). METHODS: Composite autonomic scoring scale (CASS) and heart rate variability (HRV) were performed in 40 pwRRMS and 30 pwPMS. RESULTS: pwPMS had a significantly higher sudomotor index and total CASS score compared to pwRRMS ($p < 0.001$ and $p < 0.001$, respectively). Disease duration positively correlated with sudomotor index and total CASS ($rs = 0.409$, $p < 0.001$ and $rs = 0.472$, $p < 0.001$, respectively), while the Expanded Disability Status Scale (EDSS) positively correlated with sudomotor index and total CASS ($rs = 0.411$, $p < 0.001$ and $rs = 0.402$, $p = 0.001$, respectively) in all patients. Type of multiple sclerosis (pwRRMS or pwPMS) corrected for age, sex and disease duration, was a statistically significant predictor of CASS value ($B = 1.215$, $p = 0.019$). Compared to pwRRMS, pwPMS had a significantly lower standard deviation of NN intervals (SDNN), low frequency (LF), and high frequency (HF), during both the supine and tilt-up phases (all p-values <0.006). pwPMS had a significantly lower LF/HF ($p = 0.008$) during tilt-up. CONCLUSION: There is a significant difference in autonomic function in pwRRMS and pwPMS; with pwPMS having a higher burden of AD, which is particularly evident for sweating dysfunction. SIGNIFICANCE: Further research is needed to establish whether parasympathetic and sudomotor dysfunction may serve as markers of progressive MS.

Prijić R[1], Premužić V[2], Brinar M[3], Krznarić Ž[3], Jelaković B[2], Čuković-Čavka S[3]. Increased arterial stiffness - similar findings in patients with inflammatory bowel disease without prior hypertension or diabetes and in patients with well-controlled hypertension. Blood Press. 2018;27:240-246.

[1]Department of Gastroenterology and Hepatology, University Hospital Centre Zagreb, Zagreb, Croatia; [2]Department of Nephrology, Arterial Hypertension, Dialysis and Transplantation, University Hospital Centre Zagreb, University of Zagreb School of Medicine, Zagreb, Croatia; [3]Department of Gastroenterology and Hepatology, University Hospital Centre Zagreb, University of Zagreb School of Medicine, Zagreb, Croatia

PURPOSE: Chronic inflammatory diseases are related with earlier onset of atherosclerosis. We hypothesized that inflammatory bowel disease patients with chronic, systemic inflammation have an increased arterial stiffness associated with the disease duration. Also, we wanted to compare arterial stiffness markers between inflammatory bowel disease and well-controlled hypertension patients. MATERIALS AND METHODS: A total of 89 inflammatory bowel disease patients (60 patients with Crohn's disease and 29 patients with ulcerative colitis, age range 20-64 years) without history of arterial hypertension or diabetes were enrolled and age matched with a control group of patients (73 patients, age range 25-69 years, 41 (56.1%) males) with

known history of well-controlled arterial hypertension. We have used a noninvasive device that simultaneously measures brachial blood pressure and estimates PWV and AIx in inflammatory bowel disease and hypertension groups of patients. RESULTS: Patients with pathological PWV values were significantly older, had significantly longer duration of inflammatory bowel disease, higher values of serum cholesterol and HDL-cholesterol, and higher AIx (17.4% vs. 9.8%) (all p < .05). Higher PWV was associated with age and duration of inflammatory bowel disease in the linear regression model. PWV values were higher in hypertensive patients in the first two age quartiles while interestingly, in the last two quartiles, PWV was lower than in inflammatory bowel disease group of patients. CONCLUSIONS: Chronic subclinical inflammation is responsible for dyslipidemia and accelerated atherosclerosis which consequently alterates arterial elasticity. Inflammatory bowel disease and its duration should also be considered a risk factor for subclinical organ damage, as well as hypertension.

Gabric K[#1,2], Matetic [A#1], Vilovic M[1], Ticinovic Kurir T[1], Rusic D[3], Galic T[4], Jonjic I[2], Bozic J[1]. **Health-related quality of life in type 2 diabetes mellitus patients with different risk for obstructive sleep apnea. Patient Prefer Adherence. 2018;12:765-773.**

[1]Department of Pathophysiology, University of Split School of Medicine, Split, Croatia; [2]University Eye Hospital Svjetlost, Zagreb, Croatia; [3]Department of Pharmacy, University of Split School of Medicine, Split, Croatia; [4]Study of Dental Medicine, University of Split School of Medicine, Split, Croatia; [#]Contributed equally

PURPOSE: Our study primarily aimed to investigate health-related quality of life (HRQoL) in type 2 diabetes mellitus (T2DM) patients with different risk for obstructive sleep apnea (OSA). PATIENTS AND METHODS: This cross-sectional, questionnaire-based study included 466 adult patients with T2DM on regular visit to Center for Diabetes of University Hospital of Split from April to September 2017. All subjects underwent detailed anamnestical evaluation and physical examination with anthropometric measurements. Additionally, all subjects completed STOP (Snoring, Tiredness, Observed apnea, and high blood Pressure) questionnaire to assess risk for OSA, Epworth Sleepiness Scale to assess daytime sleepiness, and Medical Outcomes Study Short Form-36 (SF-36) instrument to evaluate HRQoL. RESULTS: Most subjects (N=312, 67.0%) represented high-risk OSA group based on STOP questionnaire (STOP score ≥2). Statistically significantly lower HRQoL scores in all SF-36 dimensions were found in T2DM patients with high risk for OSA compared to low-risk group (P<0.001). STOP score showed statistically significant negative correlation with all SF-36 dimensions (P<0.001). In multiple linear regression analysis, STOP score was confirmed as statistically significant independent predictor for all SF-36 components, adjusted for body mass index, age, glycated hemoglobin, and T2DM duration (P<0.001). CONCLUSION: Our study found that high proportion of patients with T2DM are at high risk for OSA. Furthermore, we showed that group of T2DM patients with high risk for OSA has lower HRQoL in all SF-36 dimensions compared to low-risk patients.

Dosenovic S[1,2], Jelicic Kadic A[2,3], Vucic K[4], Markovina N[2], Pieper D[5], Puljak L[6,7]. **Comparison of methodological quality rating of systematic reviews on neuropathic pain using AMSTAR and R-AMSTAR. BMC Med Res Methodol. 2018;18:37.**

[1]Department of Anesthesiology and Intensive Care Medicine, University Hospital Split, Split, Croatia; [2]Laboratory for Pain Research, University of Split School of Medicine, Split, Croatia; [3]Department of Pediatrics, University Hospital Split, Split, Croatia; [4]Agency for Medicinal Products and Medical Devices, Zagreb, Croatia; [5]Institute for Research in Operative Medicine (IFOM), Witten/Herdecke University, Cologne, Germany; [6]Laboratory for Pain Research, University of Split School of Medicine, Split, Croatia; [7]Agency for Quality and Accreditation in Health Care and Social Welfare, Zagreb, Croatia

BACKGROUND: Systematic reviews (SRs) in the field of neuropathic pain (NeuP) are increasingly important for decision-making. However, methodological flaws in SRs can reduce the validity of conclusions. Hence, it is important to assess the methodological quality of NeuP SRs critically. Additionally, it remains unclear which assessment tool should be used. We studied the methodological quality of SRs published in the field of NeuP and compared two assessment tools. METHODS: We systematically searched 5 electronic databases to identify SRs of randomized controlled trials of interventions for NeuP available up to March 2015. Two independent reviewers assessed the methodological quality of the studies using the Assessment of Multiple Systematic Reviews (AMSTAR) and the revised AMSTAR (R-AMSTAR) tools. The scores were converted to percentiles and ranked into 4 grades to allow comparison between the

two checklists. Gwet's AC1 coefficient was used for inter-rater reliability assessment. RESULTS: The 97 included SRs had a wide range of methodological quality scores (AMSTAR median (IQR): 6 (5-8) vs. R-AMSTAR median (IQR): 30 (26-35)). The overall agreement score between the 2 raters was 0.62 (95% CI 0.39-0.86) for AMSTAR and 0.62 (95% CI 0.53-0.70) for R-AMSTAR. The 31 Cochrane systematic reviews (CSRs) were consistently ranked higher than the 66 non-Cochrane systematic reviews (NCSRs). The analysis of individual domains showed the best compliance in a comprehensive literature search (item 3) on both checklists. The results for the domain that was the least compliant differed: conflict of interest (item 11) was the item most poorly reported on AMSTAR vs. publication bias assessment (item 10) on R-AMSTAR. A high positive correlation between the total AMSTAR and R-AMSTAR scores for all SRs, as well as for CSRs and NCSRs, was observed. CONCLUSIONS: The methodological quality of analyzed SRs in the field of NeuP was not optimal, and CSRs had a higher quality than NCSRs. Both AMSTAR and R-AMSTAR tools produced comparable quality ratings. Our results point out to weaknesses in the methodology of existing SRs on interventions for the management NeuP and call for future improvement by better adherence to analyzed quality checklists, either AMSTAR or R-AMSTAR.

Ćatić J[1,2], Jurin I[1], Lucijanić M[3], Jerkić H[4], Blažeković R[2,5]. High red cell distribution width at the time of ST segment elevation myocardial infarction is better at predicting diastolic than systolic left ventricular dysfunction: A single-center prospective cohort study. Medicine (Baltimore). 2018;97:e0601.

[1]Department of Cardiology, Clinical Hospital "Dubrava", Zagreb; [2]Faculty of Medicine, "J.J. Strossmayer" University of Osijek, Osijek; [3]Department of Hematology, Clinical Hospital "Dubrava"; [4]Department of Cardiology, Clinical Hospital "Merkur"; [5]Department of Cardiac and Transplant Surgery, Clinical Hospital "Dubrava", Zagreb, Croatia

Multiple studies have demonstrated the association of red cell distribution width (RDW) with the ultrasound parameters of both systolic and diastolic heart dysfunction. We aimed to further investigate the clinical associations of RDW in the setting of ST-elevation myocardial infarction (STEMI) and to comparatively evaluate its predictive properties regarding systolic and diastolic dysfunction.A total of 89 patients with STEMI were prospectively analyzed. RDW was obtained at the time of STEMI and compared to the parameters of systolic and diastolic dysfunction obtained by transthoracic heart ultrasound on the 5th through 7th day post-STEMI.The median RDW was 13.9%, and among other factors, RDW was significantly associated with older age (P<.001), arterial hypertension (P=.017), hyperlipoproteinemia 2, nonsmoking (P=.027), increased thrombolysis in myocardial infarction score (P=.004), and multivessel disease (P=.007). A higher RDW was observed in patients with parameters that indicated systolic and diastolic dysfunction (ejection fraction of the left ventricle<50% [P=.009], early/late diastolic filling wave ratio [E/A]<1 [P=.001], ratio of peak early transmitral velocity and early diastolic annular velocity [E/E'] >10 [P<.001], and combined E/A < 1 and E/E' > 10 [P<.001]). The best discriminatory properties were observed for combined E/A < 1 and E/E' > 10. RDW remained significantly associated with the aforementioned parameters in a series of multivariate regression models.Elevated RDW is significantly associated with the parameters of systolic and diastolic dysfunction even after adjusting for several confounding factors in the setting of STEMI and subsequent percutaneous coronary intervention. RDW seems to be better at discriminating patients with diastolic rather than systolic dysfunction.