



Buffalo Neuroimaging Analysis Center

Chronic Cerebrospinal Venous Insufficiency (CCSVI) Research

The Buffalo Neuroimaging Analysis Center (BNAC) is committed to pioneering research in chronic cerebrospinal venous insufficiency (CCSVI) and understanding role of extra-cranial venous system in neurological disorders. Below are links to published articles and abstracts on CCSVI or role of extra-cranial venous system by the BNAC research team. Also listed are items that have not yet been published, but have been accepted for publication and are in press. Some published research is copyright protected and available only to subscribers of the journals in which they are published. Others are part of free text journals in the public domain and available by searching PubMed. The list of all BNAC CCSVI affiliated publications will be updated regularly.

PUBLISHED ARTICLES

Funding CCSVI research is/was a waste of valuable time, money and intellectual energy - No.
Zivadinov R, Weinstock-Guttman B. *Mult Scler J* (in press)

Jugular venous reflux and plasma endothelin-1 are associated with cough syncope: a case control pilot study.

Chung CH, Cheng CY, Zivadinov R, chen WC, Sheng WY, Lee YC, Hu HH, Hsu HY, Yang KY. *BMC Neurol* 2013;13(1):9.
Available through PMID: 23324129
<http://www.ncbi.nlm.nih.gov/pubmed/23324129>

No association between conventional brain MRI and CCSVI in multiple sclerosis.

Zivadinov R, Cutter G, Marr K, Ramanathan M, Benedict RHB, Elfadil M, Bergsland N, Morgan C, Carl E, Hojnacki D, Yeh AE, Willis A, Cherneva M, Hussein S, Durfee J, Kennedy C, Dwyer MG, Weinstock-Guttman B; *Am J Neuroradiol* 2012;33:1913-7.
Available through PMID: 22576891
<http://www.ncbi.nlm.nih.gov/pubmed/22576891>

Sensitivity and specificity of SWI venography for detection of cerebral venous alterations in multiple sclerosis.

Beggs CB, Shepherd SJ, Dwyer MG, Polak P, Magnano C, Ellen C, Poloni GP, Weinstock-Guttman B, Zivadinov R.; *Neurol Res* 2012;34-793-801.
Available through PMID: 22709857
<http://www.ncbi.nlm.nih.gov/pubmed/22709857>

Cine cerebrospinal fluid imaging in multiple sclerosis.

Magnano C, Schirda C, Weinstock-Guttman B, Wack D, Lindzen E., Hojnacki D, Bergsland N, Kennedy C, Belov P, Dwyer MG, Zivadinov R.; *JMRI* 2012;36-825-34.
Available through PMID:22733409
<http://www.ncbi.nlm.nih.gov/pubmed/22733409>

Role of venoplasty for treatment of multiple sclerosis: Value of open-label studies and surrogate treatment outcomes.

Zivadinov R, Weinstock-Guttman B.; JVIR 2012;23:1308-10.

Available through PMID: 22999749

<http://www.ncbi.nlm.nih.gov/pubmed/22999749>

Heart disease, overweight and cigarette smoking are associated with increased prevalence of extra-cranial venous abnormalities.

Dolic K, Weinstock-Guttman B, Marr K, Valnarov V, Carl E, Hagemeyer J, Kennedy C, Kilanowski C, Hojnacki D, Ramanathan M, Zivadinov R. *Neurol Res* 2012;34:819-27.

Available through PMID: 22971471

<http://www.ncbi.nlm.nih.gov/pubmed/22971471>

Arterial, venous and other vascular risk factors in multiple sclerosis.

Karmon Y, Ramanathan M, Minagar A, Zivadinov R, Weinstock-Guttman B. *Neurol Res* 2012;34:754-60.

Available through PMID:22971465

<http://www.ncbi.nlm.nih.gov/pubmed/22971465>

Vascular pathology of multiple sclerosis.

Zivadinov R, Alexander SJ, Minagar A. *Neurol Res* 2012;34:735-7.

Available through PMID:22971464

<http://www.ncbi.nlm.nih.gov/pubmed/22971464>

Clinical correlates of chronic cerebrospinal venous insufficiency in multiple sclerosis.

Weinstock-Guttman B, Ramanathan M, Marr K, Hojnacki D, Benedict RH, Morgan C, Yeh EA, Carl E, Kennedy C, Reuther J, Brooks C, Hunt K, Elfadil M, Andrews M, Zivadinov R., *BMC Neurol.* 2012 May 15;12(1):26.

<http://www.ncbi.nlm.nih.gov/pubmed/22587224>

Intra- and extra-luminal structural and functional extra-cranial venous anomalies in multiple sclerosis, as evidenced by two non-invasive imaging techniques.

Dolic K, Marr K Valnarov V, Dwyer MG, Carl E, Karmon Y, Kennedy C, Brooks C, Kilanowski C, Hunt K, Siddiqui AH, Hojnacki D, Weinstock-Guttman B, Zivadinov R. *AJNR* 2012;33:16-23. (CC; PBM)

Available through PMID: 22194367

<http://www.ncbi.nlm.nih.gov/pubmed/22194367>

Venous angioplasty in patients with multiple sclerosis. Results of a pilot study.

Zamboni P, Galeotti R, Weinstock-Guttman B, Kennedy C, Salvi F, Zivadinov R. *Eur J Vasc Endovasc Surg* 2012;43:116-122. (CC; PBM)

Available through PMID: 21839654

<http://www.ncbi.nlm.nih.gov/pubmed/21839654>

Sensitivity and specificity for screening of chronic cerebrospinal venous insufficiency using multimodal non-invasive imaging approach in patients with multiple sclerosis.

Dolic K, Marr K Valnarov V, Dwyer MG, Carl E, Kennedy C, Brooks C, Kilanowski C, Hunt K, Hojnacki D, Weinstock-Guttman B, Zivadinov R. *Funct Neurol* 2011;26:205-214. (CC; PBM)

Available through PMID: 22364941

<http://www.ncbi.nlm.nih.gov/pubmed/22364941>

Chronic cerebrospinal venous insufficiency in multiple sclerosis: A historical perspective

Dake MD, Zivadinov R, MD, Haacke EM. *Funct Neurol* 2011;26:181-195. (CC; PBM)

Available through PMID: 22364939

<http://www.ncbi.nlm.nih.gov/pubmed/21839654>

Risk factors for chronic cerebrospinal venous insufficiency (CCSVI) in a large cohort of volunteers.

Dolic K, Weinstock-Guttman B, Marr K, Valnarov V, Carl E, Hagemeyer J, Brooks C, Kilanowski C, Hojnacki D, Ramanathan M, Zivadinov R. *PLoS One* 2011;6(11):e28062.

Available through PMID: 22140507

<http://www.ncbi.nlm.nih.gov/pubmed/22140507>

Decreased brain venous vasculature visibility on susceptibility-weighted imaging venography in patients with multiple sclerosis is related to chronic cerebrospinal venous insufficiency.

Zivadinov R, Poloni GU, Marr K, Schirda CV, Magnano CR, Carl E, Bergsland N, Hojnacki D, Kennedy C, Beggs CB, Dwyer MG, Weinstock-Guttman B. *BMC Neurol* 2011;11:128.

Available through PMID: 22011402

<http://www.ncbi.nlm.nih.gov/pubmed/22011402>

Chronic cerebrospinal venous insufficiency in multiple sclerosis: Diagnostic, pathogenetic, clinical and treatment perspectives.

Zivadinov R, Ramanathan M, Dolic K, Marr K, Karmon Y, Siddiqui AH, Benedict RHB, Weinstock-Guttman B. *Expert Rev Neurother* 2011;11:1277-1294.

Available through PMID: 21864074

<http://www.ncbi.nlm.nih.gov/pubmed/21864074>

Prevalence, sensitivity and specificity of chronic cerebrospinal venous insufficiency in MS.

Zivadinov R, Marr K, Cutter G, Ramanathan M, Benedict RHB, Kennedy C, Elfadil M, Yeh AE, Reuther J, Brooks C, Hunt K, Andrews M, Carl E, Dwyer MG, Hojnacki D, Weinstock-Guttman B. *Neurology* 2011;77:139-144.

Available through PMID: 21490322

<http://www.ncbi.nlm.nih.gov/pubmed/21490322>

Value of magnetic resonance venography for detection of internal jugular vein anomalies in multiple sclerosis. A pilot longitudinal study.

Zivadinov R, Galleotti R, Hojnacki D, Menegatti E, Dwyer MG, Schirda C, Malagoni AM, Marr K, Kennedy C, Bartolomei I, Magnano C, Salvi F, Weinstock-Guttman B, Zamboni P. *AJNR* 2011;32:938-45.

Available through PMID: 21474626

<http://www.ncbi.nlm.nih.gov/pubmed/21474626>

Hypoperfusion of brain parenchyma is associated with the severity of chronic cerebrospinal venous insufficiency in patients with multiple sclerosis: a cross sectional preliminary report.

Zamboni P, Menegatti E, Weinstock-Guttman B, Dwyer MG, Schirda C, Malagoni AM, Hojnacki D, Kennedy C, Carl E, Bergsland N, Magnano C, Bartolomei I, Salvi F, Zivadinov R. *BMC Medicine* 2011; Volume 9 Issue 22

Available through PMID: 21385345

<http://www.ncbi.nlm.nih.gov/pubmed/21385345>

Chronic cerebrospinal vascular insufficiency is not associated with HLA-DRB*1501 status in multiple sclerosis patients

Weinstock-Guttman B, Zivadinov R, Cutter G, Tamaño-Blanco M, Marr K, Badgett D, Carl E, Elfadil M, Kennedy C, Benedict RHB, Ramanathan M. PLoS 2011; Volume 6.
Available through Pub Med PMID: 21340025

<http://www.ncbi.nlm.nih.gov/pubmed/21340025>

Use of magnetic resonance venography for characterization of the extra-cranial venous system in patients with multiple sclerosis and healthy controls

Zivadinov R, Lopez A, Weinstock-Guttman B, Schirda C, Magnano C, Kennedy C, Brooks C, Reuther J, Hunt K, Andrews M, Hojnacki D. Radiology 2011; Volume 258
Available through Pub Med PMID: 2177394

<http://www.ncbi.nlm.nih.gov/pubmed/21177394>

Chronic cerebrospinal venous insufficiency and iron deposition on susceptibility-weighted imaging in patients with multiple sclerosis: a pilot casecontrol study

Zivadinov R, Zamboni P, Haacke ME, Menegatti E, Weinstock-Guttman B, Schirda C, Malagoni AM, Hojnacki D, Kennedy C, Carl E, Bergsland N, Hussein S, Heininen-Brown M, Bartolomei I, Salvi F, Zivadinov R. International Journal of Angiology 2010;
Available through PMID: 20351672

<http://www.ncbi.nlm.nih.gov/pubmed/20351672>

Use of neck magnetic resonance venography, Doppler sonography and selective venography for diagnosis of chronic cerebrospinal venous insufficiency: a pilot study in multiple sclerosis patients and healthy controls

Hojnacki D, Zamboni P, Lopez-Soriano A, Galleotti A, Menegatti E, Weinstock-Guttman B, Schirda C, Magnano C, Malagoni AM, Kennedy C, Bartolomei I, Salvi F, Zivadinov R. International Angiology 2010; Volume 2
Available through PMID: 20351669

<http://www.ncbi.nlm.nih.gov/pubmed/20351669>

CSF dynamics and brain volume in multiple sclerosis are associated with extracranial venous flow anomalies: a pilot study

Zamboni P, Menegatti E, Weinstock-Guttman B, Schirda C, Cox JL, Malagoni AM, Hojnacki D, Kennedy C, Carl E, Dwyer MG, Bergsland N, Galeotti R, Hussein S, Bartolomei I, Salvi F, Ramanathan M, Zivadinov R. International Angiology 2010; Volume 2
Available through PMID: 20351670

<http://www.ncbi.nlm.nih.gov/pubmed/20351670>

Transcranial sonography of deep gray nuclei: a new outcome measure in multiple sclerosis?

Pirko I, Zivadinov R. Neurology 2009; Volume 73
Available through PMID: 19710403

<http://www.ncbi.nlm.nih.gov/pubmed/19710403>

The severity of chronic cerebrospinal venous insufficiency in patients with multiple sclerosis is related to altered cerebrospinal fluid dynamics

Zamboni P, Menegatti E, Weinstock-Guttman B, Schirda C, Cox JL, Malagoni AM, Hojnacki D, Kennedy C, Carl E, Dwyer MG, Bergsland N, Galeotti R, Hussein S, Bartolomei I, Salvi F, Ramanathan M, Zivadinov R. Functional Neurology 2009; Volume 24
Available through PMID: 20018140

<http://www.ncbi.nlm.nih.gov/pubmed/20018140>

CORRESPONDENCE

Unclear value of positional MR angiography in evaluating cerebral venous outflow hemodynamics.

Dolic K, Karen M, Zivadinov R. AJNR 2012 Jan 26. [Epub ahead of print] (CC; PBM)

Available through PMID: 22282442

<http://www.ncbi.nlm.nih.gov/pubmed/22282442>

Regarding CCSVI and MS: A never-ending story or a new chapter?

Zivadinov R, Salvi F, Weinstock-Guttman B. Eur J Vasc Endovasc Surg 2012;43:129-130.

Available through PMID: 22177011

<http://www.ncbi.nlm.nih.gov/pubmed/22177011>

Regarding CCSVI: Is blinding the key?

Zamboni P, Weinstock-Guttman B, Zivadinov R. Eur J Vasc Endovasc Surg 2012;43:126.

Available through PMID: 22177010

<http://www.ncbi.nlm.nih.gov/pubmed/22177010>

Prevalence, sensitivity, and specificity of chronic cerebrospinal venous insufficiency in MS.

Morovic S, Menegatti E, Zivadinov R, Cutter G, Ramanathan M, Benedict RH, Weinstock-Guttman B, Baracchini C, Gallo P, Zivadinov R, Cutter G, Ramanathan M, Benedict RH, Weinstock-Guttman B, Albayram S, Kantarci F, Zivadinov R, Cutter G, Ramanathan M, Benedict RH, Weinstock-Guttman B. Neurology 2011;77:e124-6.

Available through PMID: 22105958

<http://www.ncbi.nlm.nih.gov/pubmed/22105958>

Chronic cerebrospinal venous insufficiency: Have we found the cause and cure of MS ?

Zivadinov R, Marr K, Fox RJ, Rae-Grant A. Neurology 2011;77:1710-1712.

Available through PMID: 22042799

<http://www.ncbi.nlm.nih.gov/pubmed/22042799>

Comment on no evidence of CCSVI at multiple sclerosis onset.

Zivadinov R, Ramanathan M, Dwyer MG, Marr K, Benedict RHB, Weinstock-Guttman B. Ann Neurol 2011;69:1062-3.

Available through Pub Med PMID: 21681801

<http://www.ncbi.nlm.nih.gov/pubmed/21681801>

PUBLISHED ABSTRACTS

Sensitivity and specificity of SWI venography for detection of cerebral venous alterations in multiple sclerosis

Beggs, CB, Shepherd SJ, Dwyer MG, Polak P, Magnano C, Carl E, Poloni GU, Weinstock-Guttman B, **Zivadinov R**.
28th European Committee for Treatment and Research in Multiple Sclerosis, Lyon, France, October 10-13, 2012:P385.

Bi-monthly evolution of cortical atrophy in early relapsing-remitting multiple sclerosis over 2 years; A longitudinal study.

Zivadinov R, Tekwe C, Bergsland N, Dolezl O, Havrdova E, Krasensky J, Dwyer MG, Seidl Z, Ramasamy DP, Vaneckova M, Horakova D.
28th European Committee for Treatment and Research in Multiple Sclerosis, Lyon, France, October 10-13, 2012:P385.

Comparison of intravascular ultrasound (IVUS) to gold standard catheter venography (CV) for detection of extra-cranial venous abnormalities indicative of CCSVI: Results of the PREMise (Prospective Randomized Endovascular therapy in Multiple Sclerosis) study.

Karmon Y, Zivadinov R, Weinstock-Guttman B, Dolic K, Kennedy C, Marr K, Valnarov V, Siddiqui A.
28th European Committee for Treatment and Research in Multiple Sclerosis, Lyon, France, October 10-13, 2012:P632.

Heart disease, overweight and cigarette smoking are associated with increased prevalence of extra-cranial venous abnormalities.

Dolic K, Weinstock-Guttman B, Marr K, Valnarov V, Carl E, Hagemeyer J, Kennedy C, Kilanowski C, Hojnacki D, Ramanathan M, **Zivadinov R**.
28th European Committee for Treatment and Research in Multiple Sclerosis, Lyon, France, October 10-13, 2012:P634.

Cine cerebrospinal fluid imaging changes in patients with multiple sclerosis after venous angioplasty; A 1-year follow-up study.

Zivadinov R, Magnano C, Galeotti R, Schirda C, Weinstock-Guttman B, Menegatti E, Hagemeyer J, Malagoni AM, Hojnacki D, Kennedy C, Bartolomei I, Beggs C, Salvi F, Zamboni P.
28th European Committee for Treatment and Research in Multiple Sclerosis, Lyon, France, October 10-13, 2012:P634.

Prevalence, sensitivity and specificity of chronic cerebrospinal venous insufficiency in other neurological diseases; A case-control study.

Zivadinov R, Marr K, Valnarov V, Kilanowski C, Kennedy C, Guttuso T, Lichter D, Silvestri N, Fugoso LE, Yeh EA, Ramanathan M, Benedict RHB, Carl E, Hojnacki D, Weinstock-Guttman B.
28th European Committee for Treatment and Research in Multiple Sclerosis, Lyon, France, October 10-13, 2012:P634.

Prevalence, sensitivity and specificity of chronic cerebrospinal venous insufficiency in pediatric multiple sclerosis.

Zivadinov R, Yeh EA, Marr K, Valnarov V, Kilanowski C, Karpinski M, Carl E, Kennedy C, Weinstock-Guttman B.
28th European Committee for Treatment and Research in Multiple Sclerosis, Lyon, France, October 10-13, 2012:P1090.

Risk factors for chronic cerebrospinal venous insufficiency (CCSVI).

Dolic K, Weinstock-Guttman B, Marr K, Valnarov V, Carl E, Hagemeyer J, Brooks C, Kilanowski C, Hojnacki D, Ramanathan M, Zivadinov R.
64th American Academy of Neurology Annual Meeting, New Orleans, LO, April 25, 2012:P05.127.

Intravascular Ultrasound for detection of Azygous and Internal Jugular vein (IJV) abnormalities as part of the PREMise (Prospective Randomized Endovascular therapy in Multiple Sclerosis) study.

Karmon Y, Zivadinov R, Weinstock-Guttman B, Kennedy C, Dolic K, Marr K, Valnarov V, Siddiqui A. 2nd Annual ISNVD Scientific Meeting, Orlando FL, 2012:A165.

Multimodal imaging approach sclerosis for screening of chronic cerebrospinal venous insufficiency in patients with multiple sclerosis

Dolic K, Marr K, Valnarov V, Dwyer MG, Carl E, Kennedy C, Kilanowski C, Hojnacki D, Weinstock-Guttman B, Zivadinov R. 2nd Annual ISNVD Scientific Meeting, Orlando FL, 2012:A141.

Risk factors for chronic cerebrospinal venous insufficiency (CCSVI) in a large cohort of volunteers

Dolic, K., Weinstock-Guttman, B., Marr, K., Valnarov, V., Carl, E., Hagemeyer, J., Brooks, C., Kilanowski, C., Hojnacki, D., Ramanathan, M., Zivadinov, R., 2011ECTRIMS meeting, Amsterdam, NL

Comparative study of MR venography and doppler sonography in depicting extracranial venous abnormalities in multiple sclerosis patients and healthy subjects.

Dolic K, Marr K, Valnarov V, Dwyer MG, Carl E, Karmon Y, Kennedy C, Brooks C, Kilanowski C, Hunt K, Hojnacki D, Weinstock-Guttman B, Zivadinov R. Neurology 2011; Volume 76 (Supplement 4)

Multimodal diagnostic correlates between doppler sonography, catheter venography and intravascular ultrasound in detection of venous valve abnormalities during phase I PREMise (Prospective Randomized Endovascular therapy in Multiple Sclerosis) study.

Karmon Y, Zivadinov R, Weinstock-Guttman B, Marr K, Valnarov V, Dolic K, Kennedy C, Carl E, Hopkins LN, Levy EI, Siddiqui AH. Neurology 2011; Volume76 (Supplement 4)

Intraluminal and extraluminal extra-cranial structural and functional venous abnormalities in multiple sclerosis patients and healthy controls.

Zivadinov R, Dolic K, Marr K, Valnarov V, Dwyer MG, Carl E, Karmon Y, Kennedy C, Brooks C, Kilanowski C, Hunt K, Hojnacki D, Weinstock-Guttman B. 1st Congress of International Society for Neurovascular Disease. Bologna, Italy, March 15, 2011.

Hypoperfusion of brain parenchyma in CCSVI. 1st Congress of International Society for Neurovascular Disease.

Zivadinov R. Bologna, Italy, March 15, 2011.

Iron and veins in multiple sclerosis.

Zivadinov R. 1st Congress of International Society for Neurovascular Disease. Bologna, Italy, March 14, 2011.

The limits of magnetic resonance venography for diagnosis of chronic cerebrospinal venous insufficiency.

Zivadinov R. 1st Congress of International Society for Neurovascular Disease. Bologna, Italy, March 14, 2011.

Presence and severity of chronic cerebrospinal venous insufficiency is related to lower brain parenchyma venous vasculature visibility on susceptibility-weighted imaging in patients with multiple sclerosis.

Zivadivov R, Poloni G, Schirda C, Magnano C, Carl E, Bergsland N, Hojnacki D, Kennedy C, Parker F, Dwyer M, Weinstock-Guttman B. Multiple Sclerosis 2010; Volume 16 (Supplement 10).

Associations of HLA DR*1501 status and chronic cerebrospinal venous insufficiency in multiple sclerosis.

Weinstock-Guttman B, Zivadivov R, Cutter G, Tamano-Blanco M, Badgett D, Marr K, Carl E, Elfadil M, Kennedy C, Ramanathan M. Multiple Sclerosis 2010; Volume 16 (Supplement 10).

MRI results of blinded chronic cerebrospinal venous insufficiency study in patients with multiple sclerosis, healthy controls and patients with other neurologic diseases.

Zivadivov R, Cutter G, Marr K, Ramanathan M, Benedict RHB, Elfadil M, Bergsland N, Morgan C, Carl E, Hojnacki D, Yeh E, Willis L, Cherneva M, Hussein S, Durfee J, Kennedy C, Dwyer M, Weinstock-Guttman B. Multiple Sclerosis 2010; Volume 16 (Supplement 10).

Increased iron concentration and decreased volume of deep-grey matter are associated with increased disability in patients with multiple sclerosis.

Zivadivov R, Heininen-Brown M, Schirda C, Bergsland N, Magnano C, Hojnacki D, Ramasamy DP, Kennedy C, Carl E, Dwyer M, Weinstock-Guttman B. Multiple Sclerosis 2010; Volume 16 (Supplement 10)

Relation between quantitative venous vasculature assessment on susceptibility-weighted imaging and haemodynamic MRI metrics in multiple sclerosis patients.

Poloni G, Dwyer M, Parker F, Magnano C, Schirda C, Bergsland N, Zivadivov R. Multiple Sclerosis 2010; Volume 16 (Supplement 10)

Endovascular treatment for chronic cerebrospinal venous insufficiency in multiple sclerosis. A longitudinal pilot study.

Zamboni P, Galeotti R, Weinstock-Guttman B, Cutter G, Menegatti E, Malagoni AM, Hojnacki D, Cox JL, Kennedy C, Bartolomei I, Salvi F, Zivadivov R. Multiple Sclerosis 2009 Volume 15 (Supplement 2)

Clinical correlates of chronic cerebrospinal venous insufficiency in multiple sclerosis.

Weinstock-Guttman B, Cutter G, Marr K, Hojnacki D, Ramanathan M, Benedict RHB, Morgan C, Yeh EA, Carl E, Kennedy C, Reuther J, Brooks C, Elfadil M, Andrews, M, Zivadivov R. Multiple Sclerosis 2010; Volume 16 (Supplement 10)

Increased iron concentration on susceptibility-weighted imaging is associated with decreased deep-grey matter volumes in patients with multiple sclerosis.

Zivadivov R, Schirda C, Heininen-Brown M, Bergsland N, Magnano C, Durfee J, Kennedy C, Carl E, Hojnacki D, Weinstock-Guttman B, Dwyer M. Multiple Sclerosis 2010; Volume 16 (Supplement 10)

Use of magnetic resonance venography for visualisation of the internal jugular veins in patients with multiple sclerosis diagnosed with chronic cerebrospinal venous insufficiency and treated with percutaneous angioplasty.

Lopez-Soriano A, Zivadivov R, Galeotti R, Hojnacki D, Menegatti E, Schirda C, Malagoni AM, Marr K, Kennedy C, Bartolomei I, Magnano C, Salvi F, Weinstock-Guttman B, Zamboni P. Multiple Sclerosis 2010; Volume 16 (Supplement 10)

Multiple sclerosis patients with chronic cerebrospinal venous insufficiency present with increased iron concentration on susceptibility-weighted imaging in deep-grey matter.

Zivadinov R, Heininen-Brown M, Schirda C, Magnano C, Hojnacki D, Kennedy C, Carl E, Bergsland N, Hussein S, Cherneva M, Willis L, Dwyer M, Weinstock-Guttman B. Multiple Sclerosis 2010; Volume 16 (Supplement 10).

Relation between quantitative venous vasculature assessment on susceptibility-weighted imaging and conventional magnetic resonance metrics in multiple sclerosis patients.

Poloni G, Dwyer M, Parker F, Magnano C, Schirda C, Bergsland N, Zivadinov R. Multiple Sclerosis 2010; Volume 16 (Supplement 10)

Hypoperfusion of brain parenchyma is strongly associated with the severity of chronic cerebrospinal venous insufficiency in patients with multiple sclerosis.

Zamboni P, Menegatti E, Weinstock-Guttman B, Dwyer MG, Schirda C, Malagoni AM, Hojnacki D, Kennedy C, Carl E, Bergsland N, Magnano C, Bartolomei I, Salvi F, Zivadinov R. Neurology 2010; Volume 74 (Supplement 2).

Chronic cerebrospinal venous insufficiency and iron deposition on susceptibility-weighted imaging in patients with multiple sclerosis.

Dwyer MG, Zamboni P, Haacke EM, Menegatti E, Weinstock-Guttman B, Schirda C, Malagoni AM, Hojnacki D, Kennedy C, Carl E, Bergsland N, Hussein S, Heininen-Brown M, Bartolomei I, Salvi F, Zivadinov R. Neurology 2010; Volume 74 (Supplement 2).

Quantitative venous vasculature assessment on susceptibility-weighted imaging reflects presence of severe chronic venous insufficiency in the brain parenchyma of multiple sclerosis patients. A case-control study.

Poloni GU, Zamboni P, Haacke EM, Bastianello S, Dwyer MG, Bergsland N, Schirda C, Wack D, Magnano C, Weinstock-Guttman B, Salvi F, Hojnacki D, Zivadinov R. Neurology 2010; Volume 74 (Supplement 2).

Cine cerebrospinal fluid imaging in multiple sclerosis. A case-control study.

Zivadinov R, Magnano C, Weinstock-Guttman B, Wack D, Lindzen E, Hojnacki D, Bergsland N, Kennedy C, Reuther J, Dwyer MG, Schirda C. Proceedings of the Society for Magnetic Resonance Medicine 2010

Use of magnetic resonance venography for characterization of extracranial venous system in patients with multiple sclerosis and in normal controls. A blinded controlled study

Zivadinov R, Lopez A, Weinstock-Guttman B, Schirda C, Magnano C, Kennedy C, Brooks C, Reuther J, Hunt K, Andrews M, Hojnacki D. Proceedings of the Society for Magnetic Resonance Medicine 2010

A three-dimensional multi-scale line filter algorithm for segmentation of vein vessels in susceptibility weighted images.

Poloni GU, Dwyer MG, Bergsland N, Schirda C, Bastianello S, Zivadinov R. Proceedings of the Society for Magnetic Resonance Medicine 2010

An objective quantification technique of the cerebrospinal fluid (CSF) flow in the cerebral aqueduct, in patients with multiple sclerosis.

Schirda C, Zamboni P, Magnano C, Lindzen E, Wack D, Weinstock-Guttman B, Ramasamy D, Carl E, Hojnacki D, Kennedy C, Dwyer MG, Bergsland N, Cox JL, Salvi F, Zivadinov R. Proceedings of the Society for Magnetic Resonance Medicine 2010

Quantitative venous vasculature assessment on susceptibility-weighted imaging reflects presence of severe chronic venous insufficiency in the brain parenchyma of multiple sclerosis patients. A case-control study.

Poloni GU, Zamboni P, Haacke EM, Bastianello S, Dwyer MG, Bergsland N, Schirda C, Wack D, Magnano C, Weinstock-Guttman B, Salvi F, Hojnacki D, Zivadinov R. Neurology 2010; Volume 74 (Supplement 2).

Objective quantification of cerebrospinal fluid (CSF) flow rate in cerebral aqueduct in patients with multiple sclerosis

Schirda C, Zamboni P, Magnano C, Lindzen E, Wack D, Weinstock-Guttman B, Ramasamy D, Carl E, Hojnacki D, Kennedy C, Dwyer MG, Bergsland N, Cox JL, Salvi F, Zivadinov R.. Neurology 2010; Volume 74 (Supplement 2).

Combined transcranial and extracranial venous doppler evaluation (CTEVD study). Description of the design and interim results of an epidemiological study of the prevalence of chronic cerebrospinal venous insufficiency in MS and related diseases.

Zivadinov R, Marr K, Ramanathan M, Zamboni P, Benedict RHB, Cutter G, Kennedy C, Elfadil M, Hojnacki D, Munschauer FE, Reuther J, Brooks C, Hunt K, Andrews M, Weinstock-Guttman B. Neurology 2010; Volume 74 (Supplement 2).

Cine cerebrospinal fluid imaging in multiple sclerosis. A case-control study.

Magnano C, Schirda C, Weinstock-Guttman B, Wack D, Lindzen E, Hojnacki D, Bergsland N, Kennedy C, Reuther J, Dwyer MG, Zivadinov R. Neurology 2010; Volume 74 (Supplement 2)

Hypoperfusion of brain parenchyma is strongly associated with the severity of chronic cerebrospinal venous insufficiency in patients with multiple sclerosis.

Zamboni P, Menegatti E, Weinstock-Guttman B, Dwyer MG, Schirda C, Malagoni AM, Hojnacki D, Kennedy C, Carl E, Bergsland N, Magnano C, Bartolomei I, Salvi F, Zivadinov R. Neurology 2010; Volume 74 (Supplement 2).

Chronic cerebrospinal venous insufficiency and iron deposition on susceptibility-weighted imaging in patients with multiple sclerosis.

Dwyer MG, Zamboni P, Haacke EM, Menegatti E, Weinstock-Guttman B, Schirda C, Malagoni AM, Hojnacki D, Kennedy C, Carl E, Bergsland N, Hussein S, Heininen-Brown M, Bartolomei I, Salvi F, Zivadinov R. Neurology 2010; Volume 74 (Supplement 2).

Chronic cerebrospinal venous insufficiency is related to inverted and decreased cerebrospinal fluid flow and greater brain atrophy in patients with multiple sclerosis.

Zamboni P, Menegatti E, Weinstock-Guttman B, Cox JL, Claudiu S, Malagoni AM, Hojnacki D, Kennedy C, Carl E, Dwyer MG, Bergsland N, Galeotti R, Hussein S, Bartolomei I, Salvi F, Zivadinov R. Multiple Sclerosis 2009 Volume 15 (Supplement 2)

Endovascular treatment for chronic cerebrospinal venous insufficiency in multiple sclerosis. A longitudinal pilot study.

Zamboni P, Galeotti R, Weinstock-Guttman B, Cutter G, Menegatti E, Malagoni AM, Hojnacki D, Cox JL, Kennedy C, Bartolomei I, Salvi F, Zivadinov R. Multiple Sclerosis 2009 Volume 15 (Supplement 2)

LINKS TO JOURNALS OR CONFERENCE WEBSITES

American Journal of Neuroradiology

<http://www.ajnr.org/>

Annals of Neurology

[http:// www.aneuroa.org](http://www.aneuroa.org)

BMC Medicine

<http://www.biomedcentral.com/bmcmed/>

BMC Neurology

<http://www.biomedcentral.com/bmcneuro/>

European Committee and Research for Treatment in Multiple Sclerosis

<http://www.ectrims.eu/>

European Journal of Vascular and Endovascular Surgery

<http://www.sciencedirect.com/esvs>

Expert Review of Neurotherapeutics

<http://www.expert-reviews.com/neurotherapeutics>

Functional Neurology

<http://www.functionalneurology.it/>

International Angiology

<http://www.minervamedica.it/en/journals/international-angiology/index.php>

International Society for Neurovascular Disease

<http://www.isnvd.org/>

Journal of Magnetic Resonance Imaging

<http://www.mrijournal.com/>

Journal of Vascular and Interventional Radiology

<http://www.jvir.org/>

Multiple Sclerosis

<http://msj.sagepub.com/>

Neurology

<http://www.neurology.org/>

Neurological Research

<http://www.hindawi.com/journals/nri/>

PLoS One

www.plos.org

Proceedings of the Society for Magnetic Resonance Medicine

<http://www.ismrm.org/>

PubMed

www.pubmed.com

Radiology

<http://radiology.rsna.org/>