

Polish Experience of CCSVI

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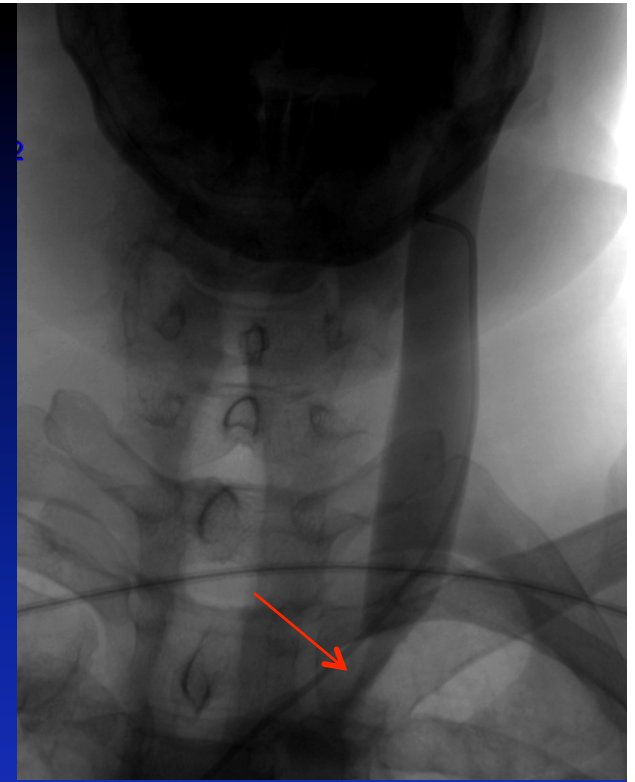
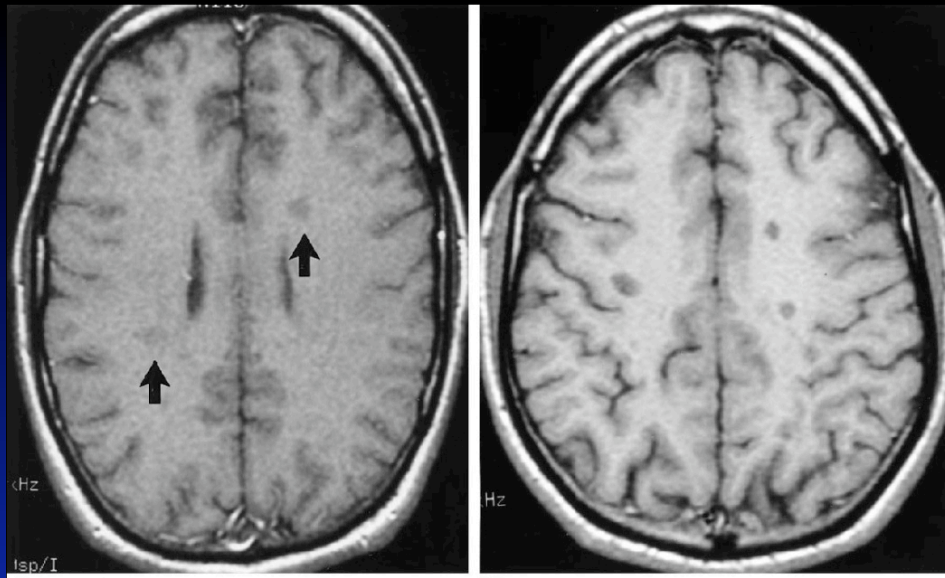
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- over 800 endovascular procedures for CCSVI performed
- published study on safety issues (*the Phlebology*)
- submitted study on correlation between CCSVI and MS
- prepared study on postop results (6 months) in a group of 100 patients
- under preparation – study on ophthalmological findings in CCSVI patients
- Under preparation – study on objective evaluation of catheter venography (i-flow)

Main problems:

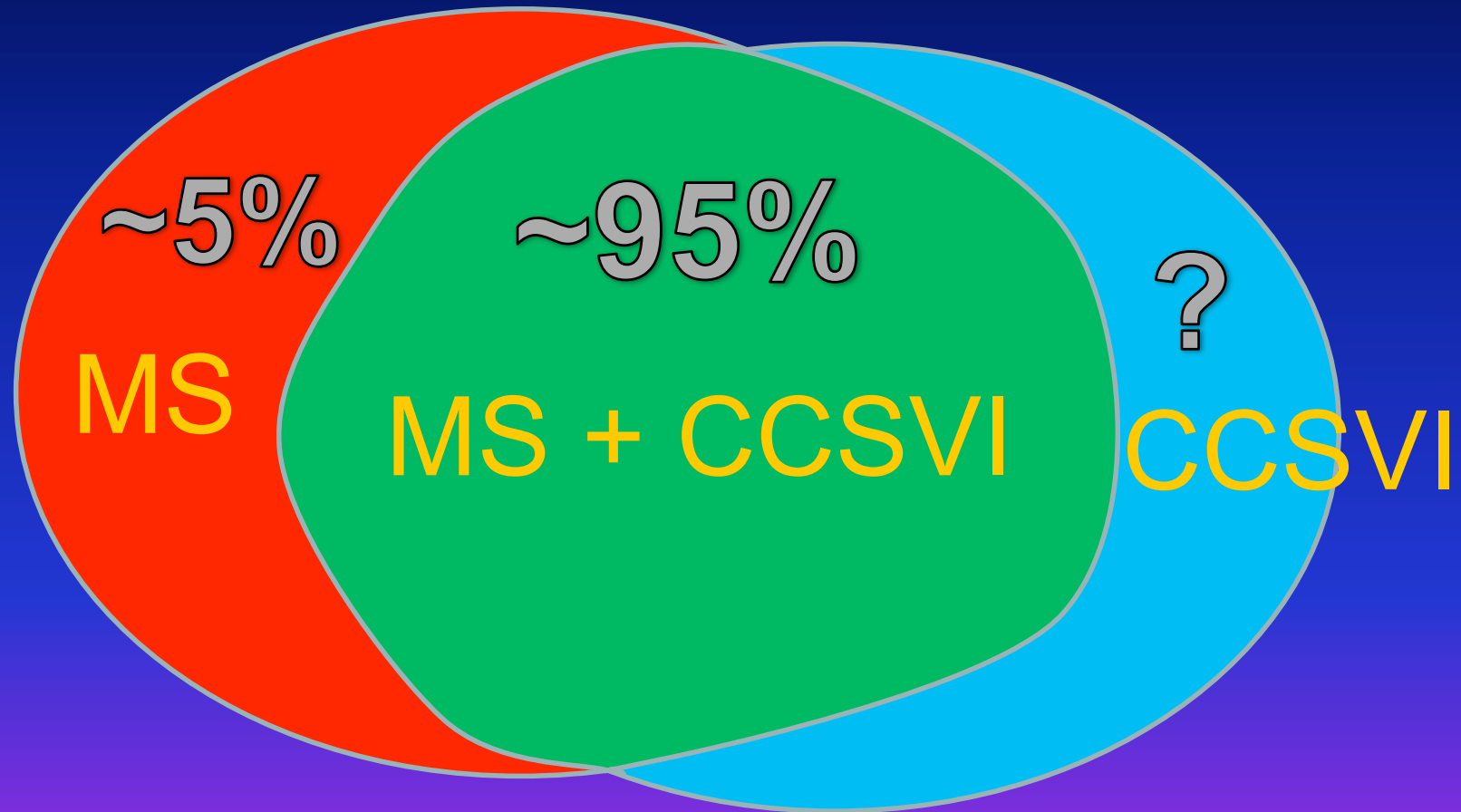
- **What is the relationship between MS and CCSVI?**
- **Is endovascular treatment for CCSVI safe?**
- **What about clinical results of such a treatment?**



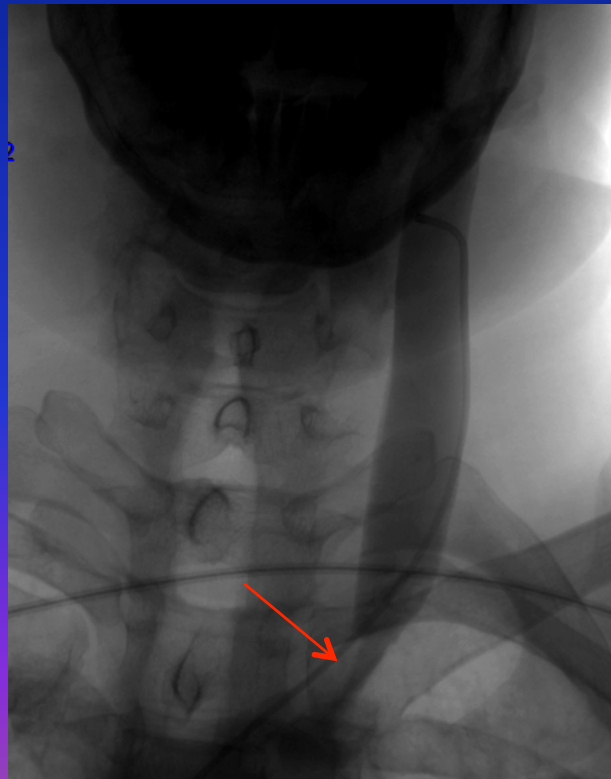
MS \neq CCSVI ???

Currently it is hypothesized that the two pathologies are highly correlated and most likely - CCSVI is the indispensable (but not the only) factor for the development of MS

MS and CCSVI



Has CCSVI an actual clinical
impact on MS ??



Patients

- **381** multiple sclerosis patients
- The patients were aged 15–70 years with a median age of 43 years
- The patients suffered from MS for 0.5 to 41 years, with a median duration of the disease of 10 years
- MS began at the age of 12–60 years, median: 31 years



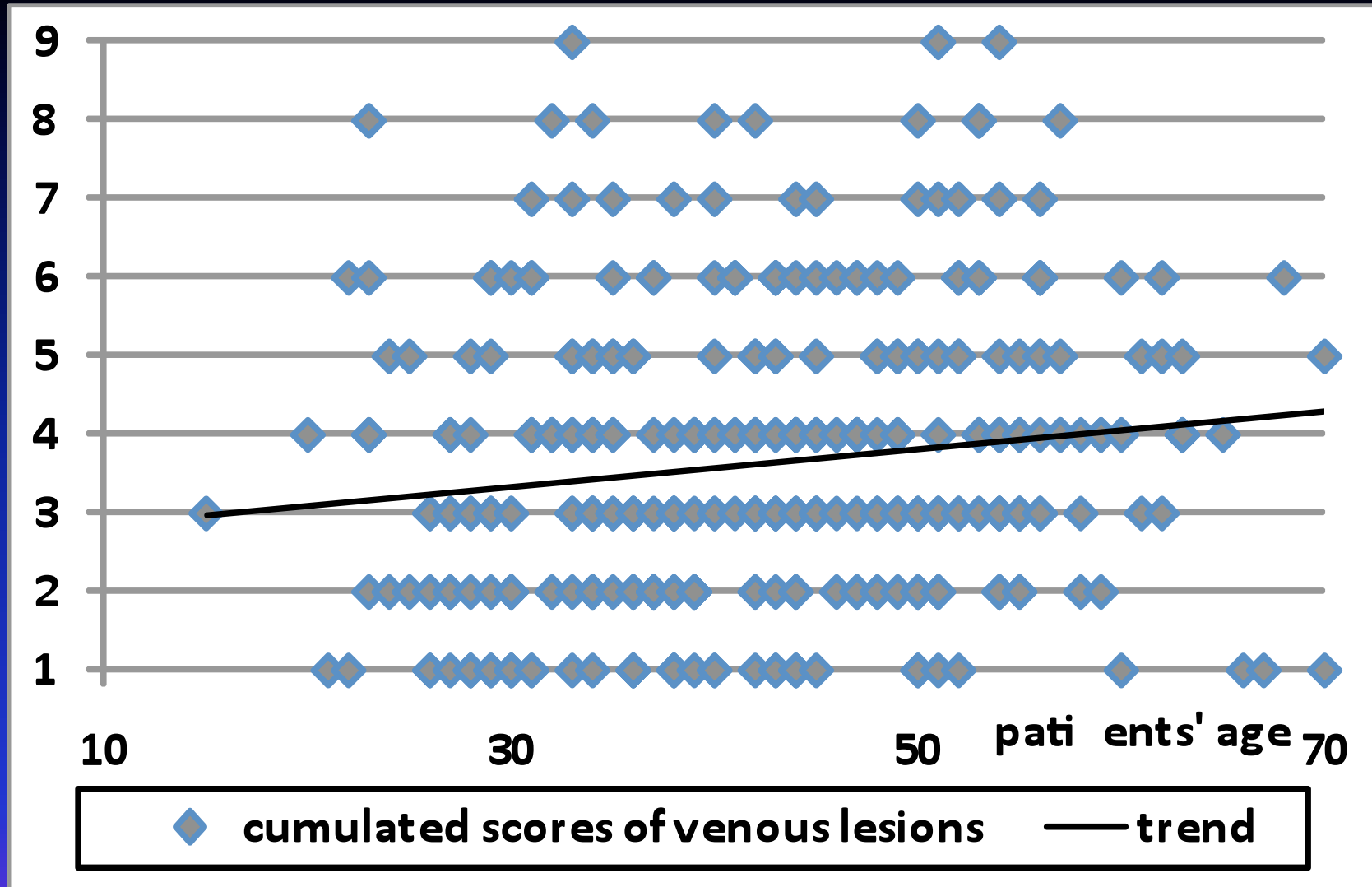
Prevalence of CCSVI in MS patients

- venous outflow abnormalities in at least one vein - 97.1%
- normal outflow – 2.9%
- lesions in one vein - 36.0% of the patients, 2 veins: 59.7% ; 3 veins: 4.3%

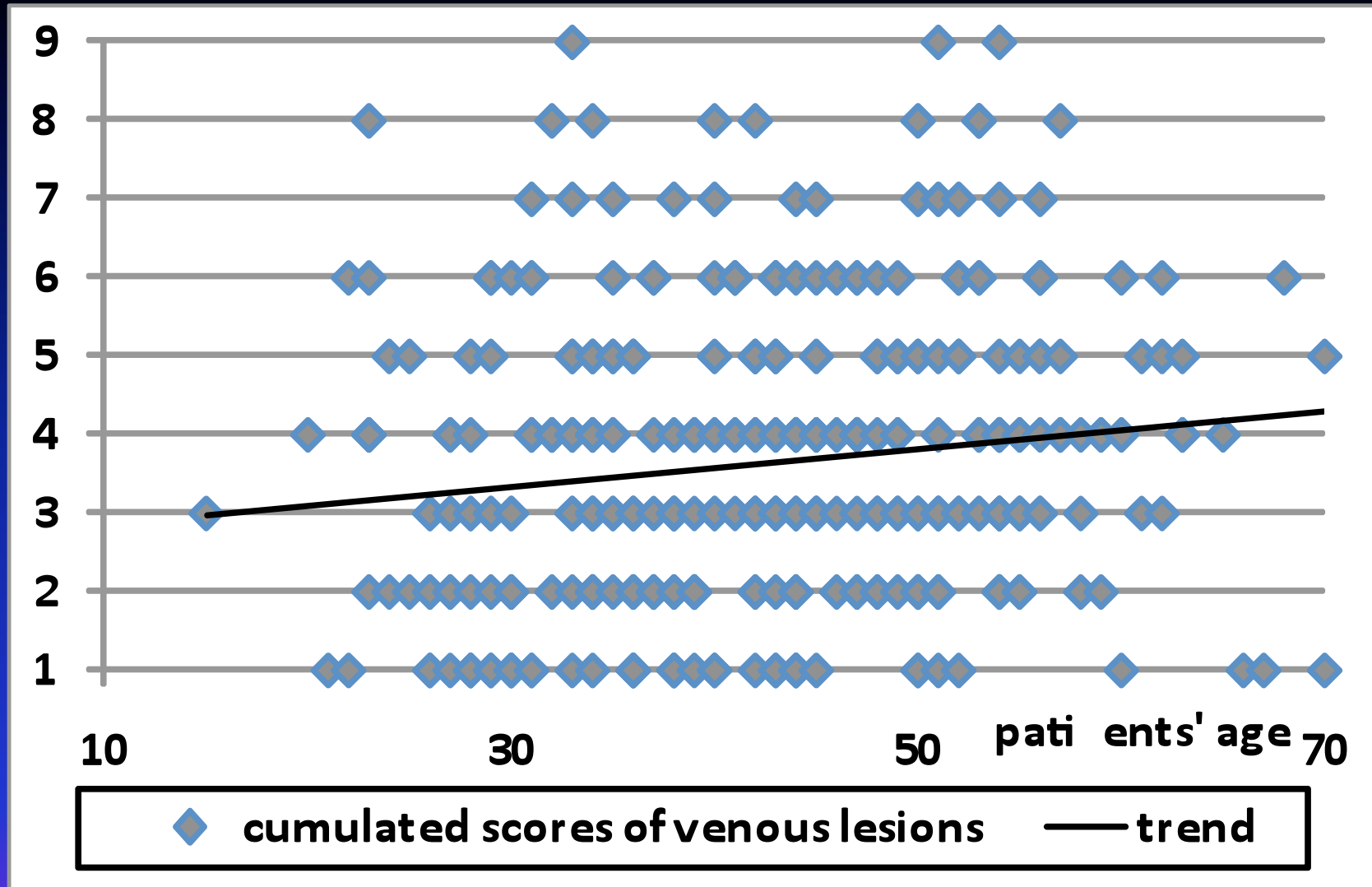


Localization of CCSVI lesions

- right internal jugular vein - 74%
- left internal jugular vein - 87%
- azygous vein - 5%
- left brachiocephalic vein - 2.4%
- right brachiocephalic vein - 0



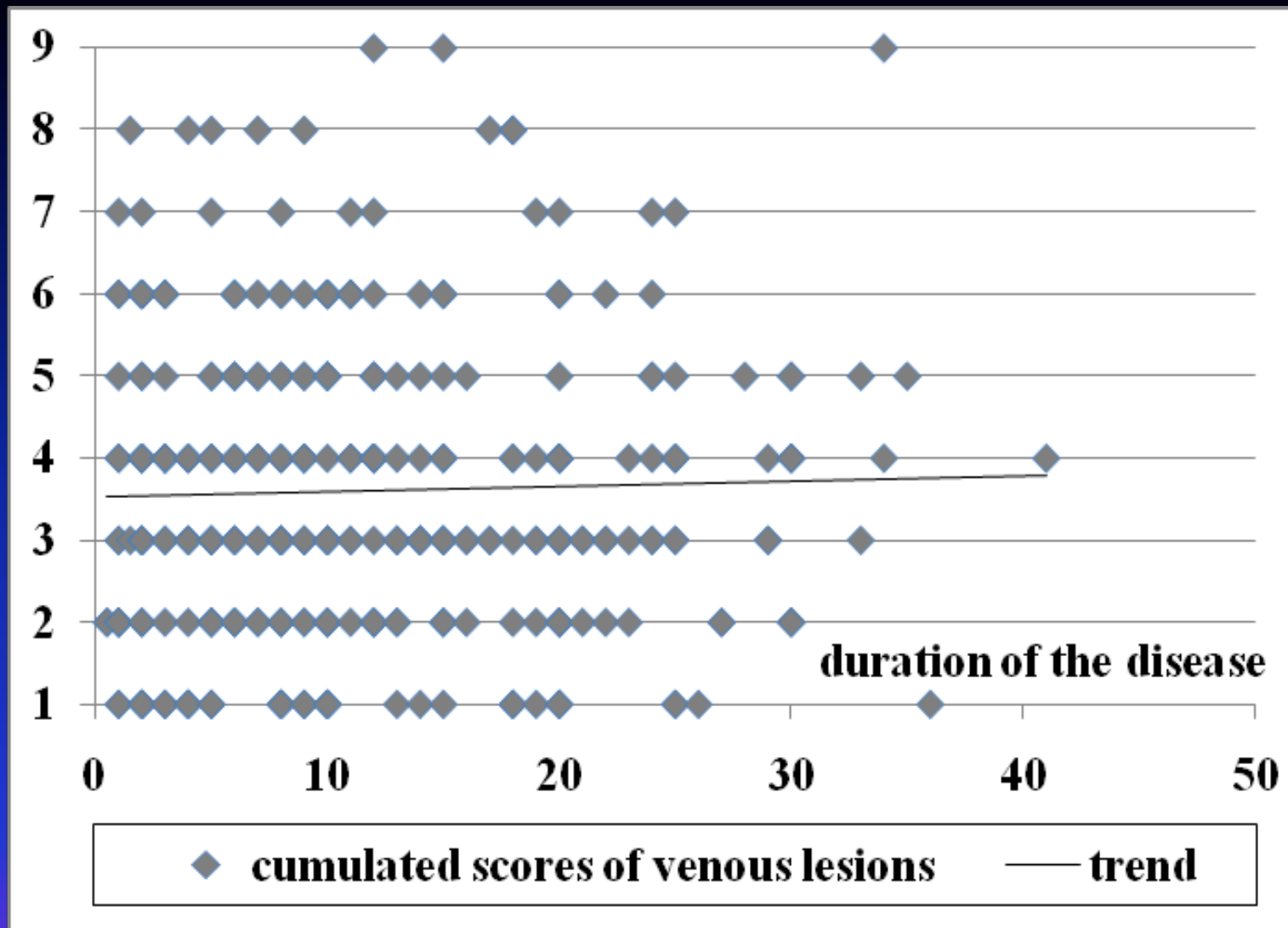
Patients' age compared to cumulated scores of venous lesions (p=0.001)



Patients' age compared to cumulated scores of venous lesions (p=0.001)

Patients' age and CCSVI

- CCSVI abnormalities were more severe in older patients
- This may mean that these vascular malformations progress
- However, this progression is likely to be very slow.
- Number of the lesions seemed to be constant.
- Thus, probably, no new lesions develop in an adult patient.

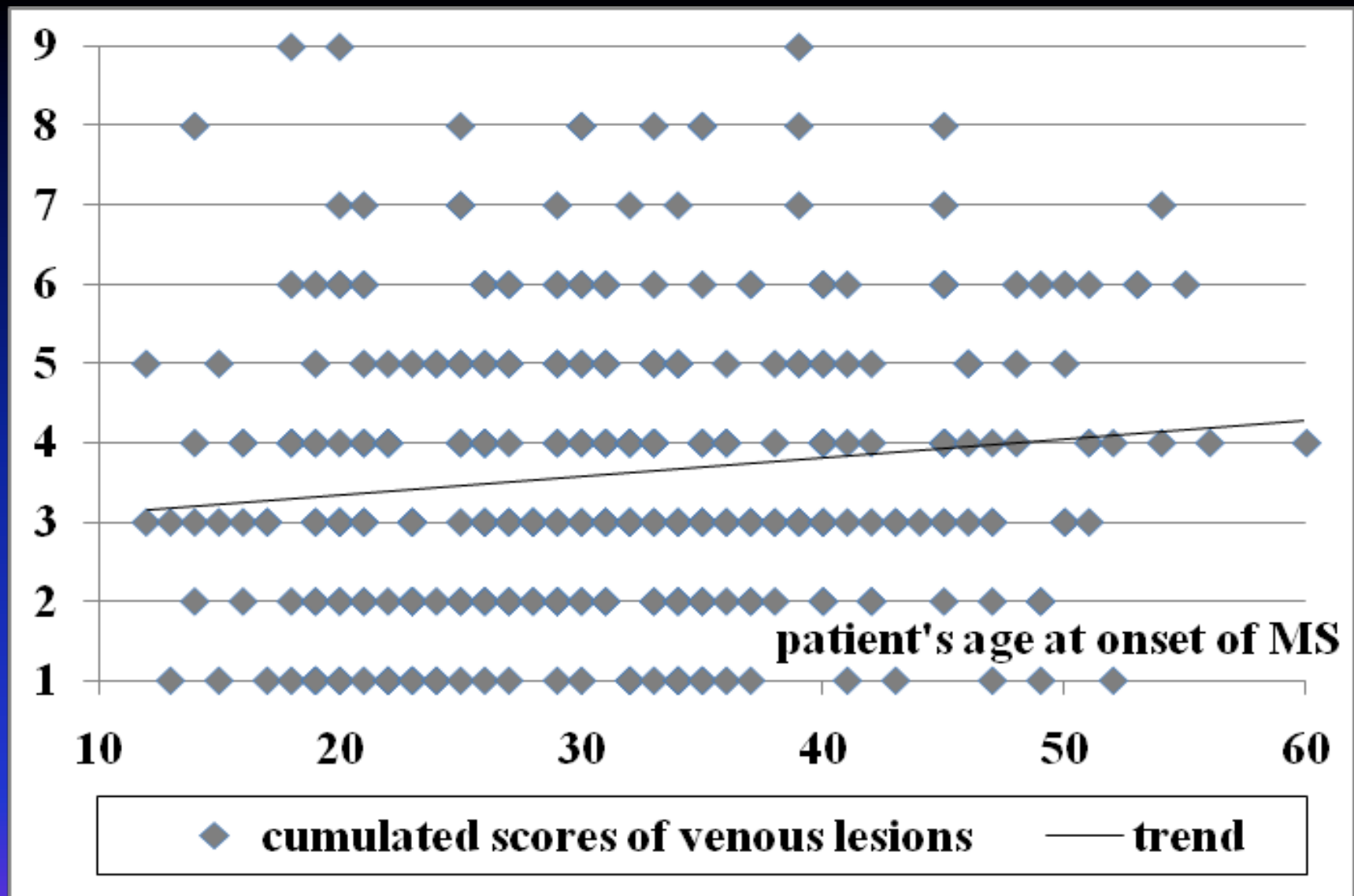


Duration of MS compared to cumulated scores of venous lesions ($p > 0.05$)

Duration of MS and CCSVI

is CCSVI a product of MS?

- no correlation existed between duration of MS and severity of CCSVI
- This may mean that CCSVI is not a product of MS



Patients' age at onset of MS compared to cumulated scores of venous lesions. P values are <0.05

Patients' age at onset of MS and CCSVI

does CCSVI account for the initiation of MS ?

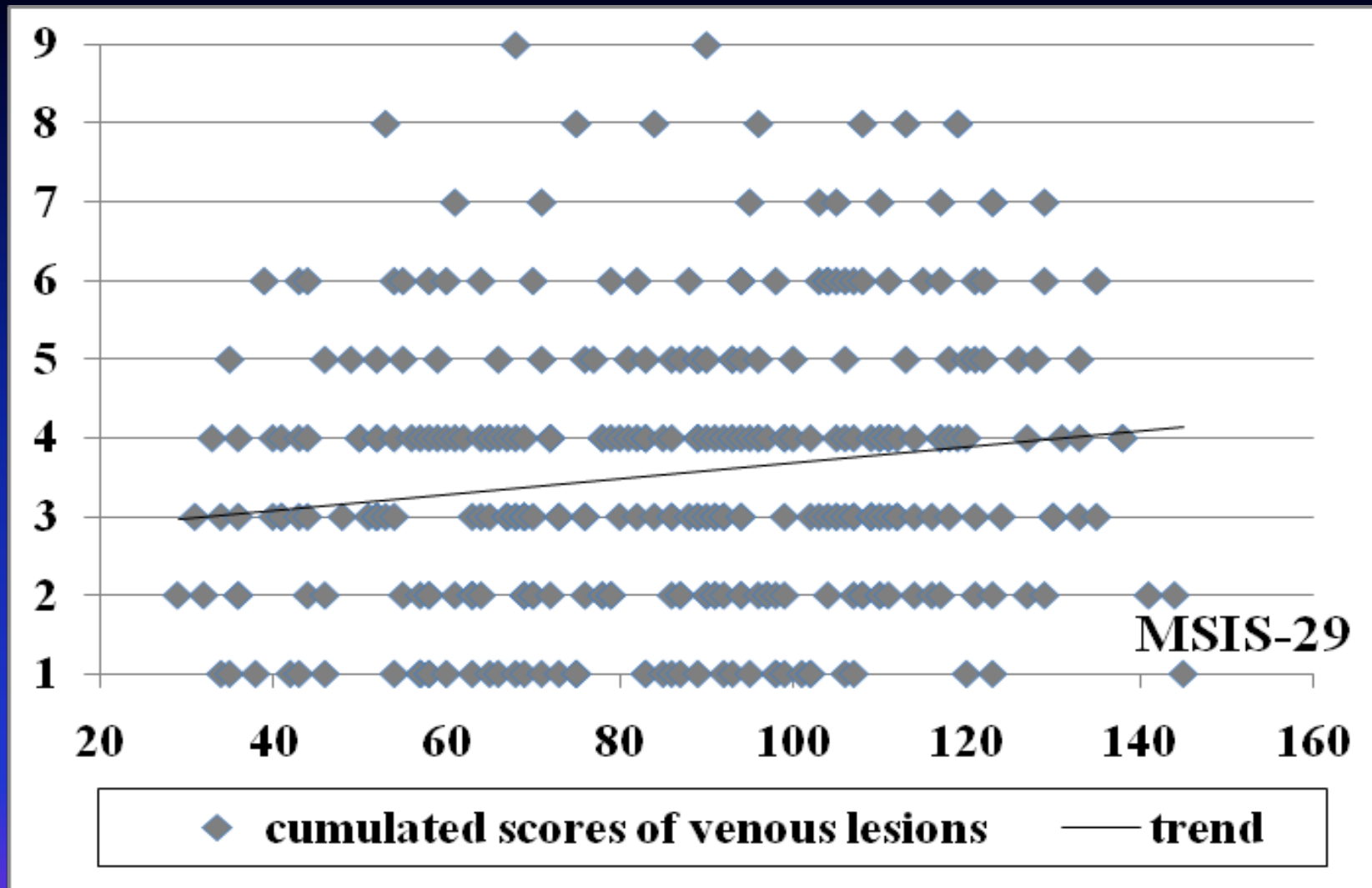
- MS patients who had their first attack of the disease at a younger age presented with a less severe CCSVI
- Therefore, since a more severe venous blockage did not result in an earlier beginning of neurological symptoms, it may mean that actually the other factor, and not CCSVI, is responsible for the initiation of MS

Patients' age at onset of MS and CCSVI

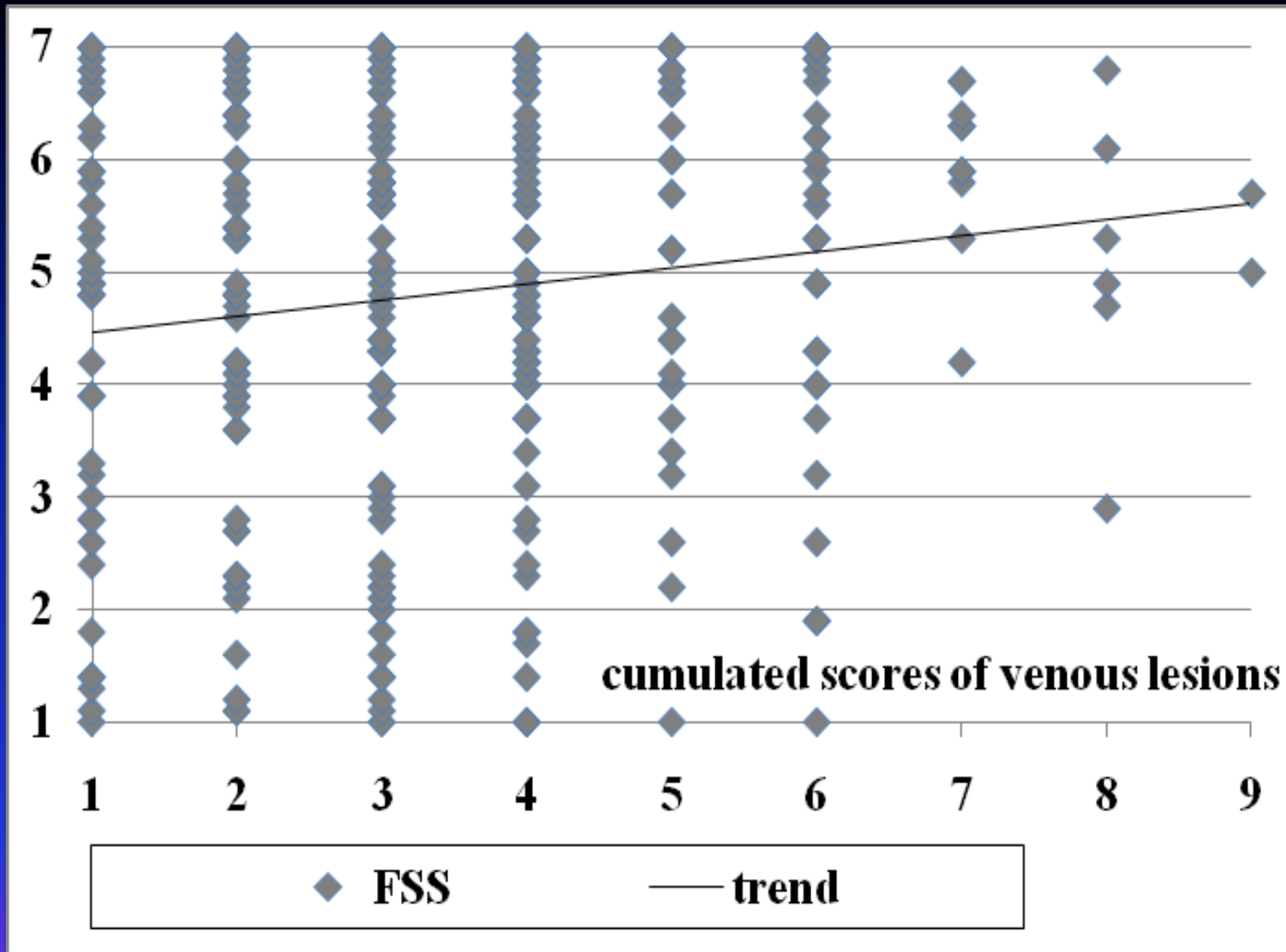
does CCSVI account for the initiation of MS ?

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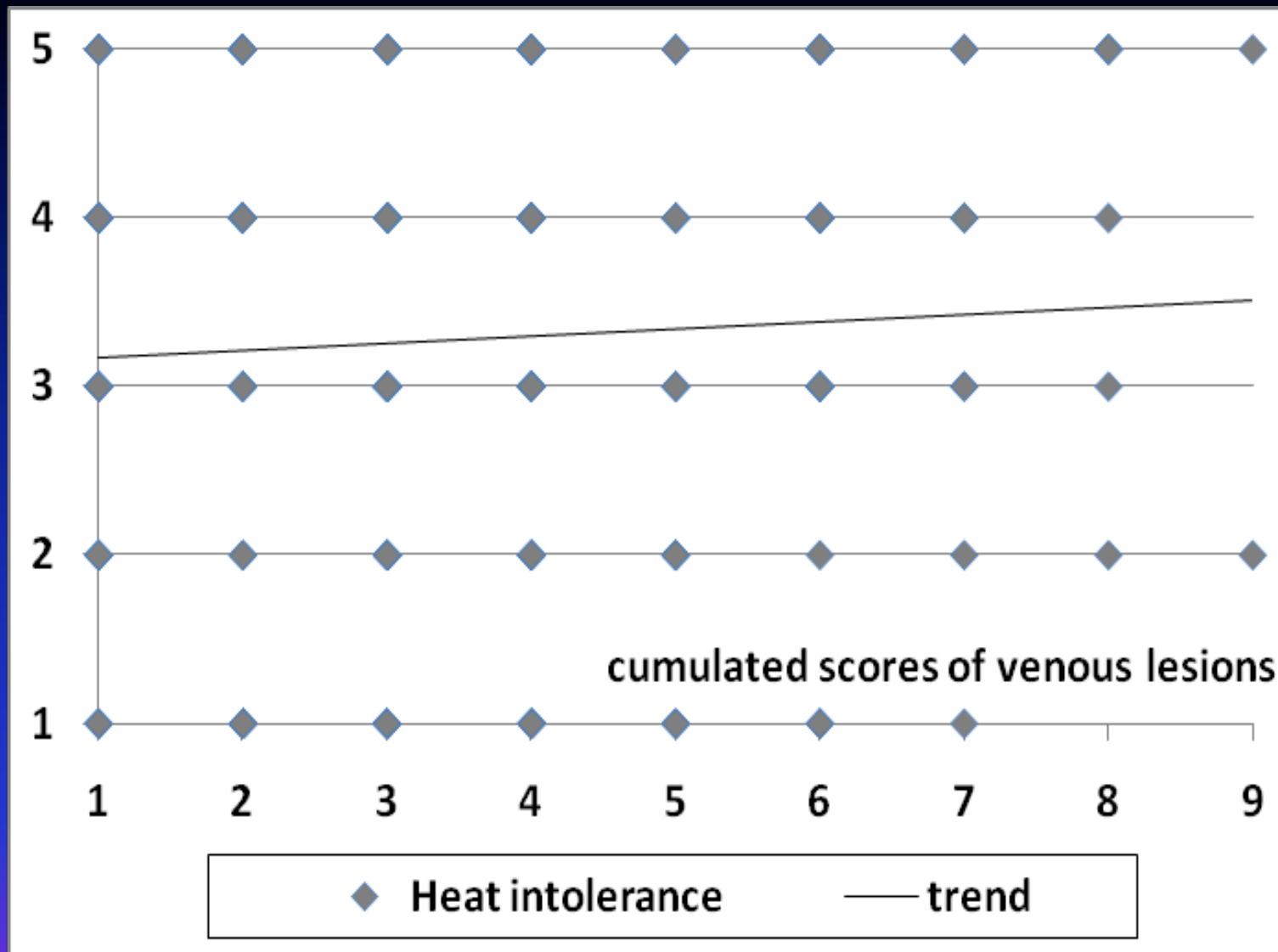
Correlations between severity of CCSVI and clinical impact of MS



MSIS-29 compared to cumulated scores of venous lesions. P values are <0.05



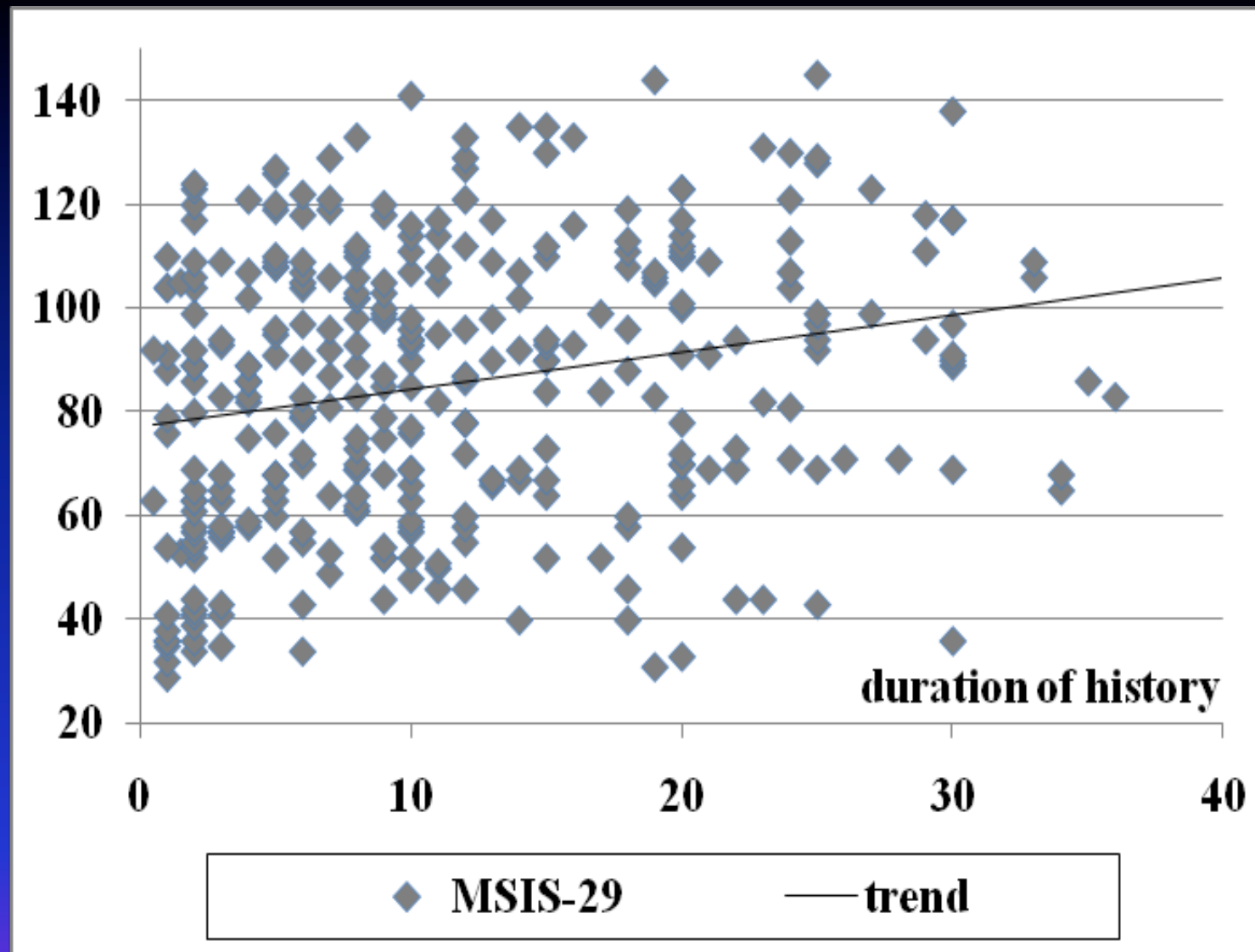
Fatigue Severity Score (FSS) compared to cumulated scores of venous lesions
 P values are <0.05



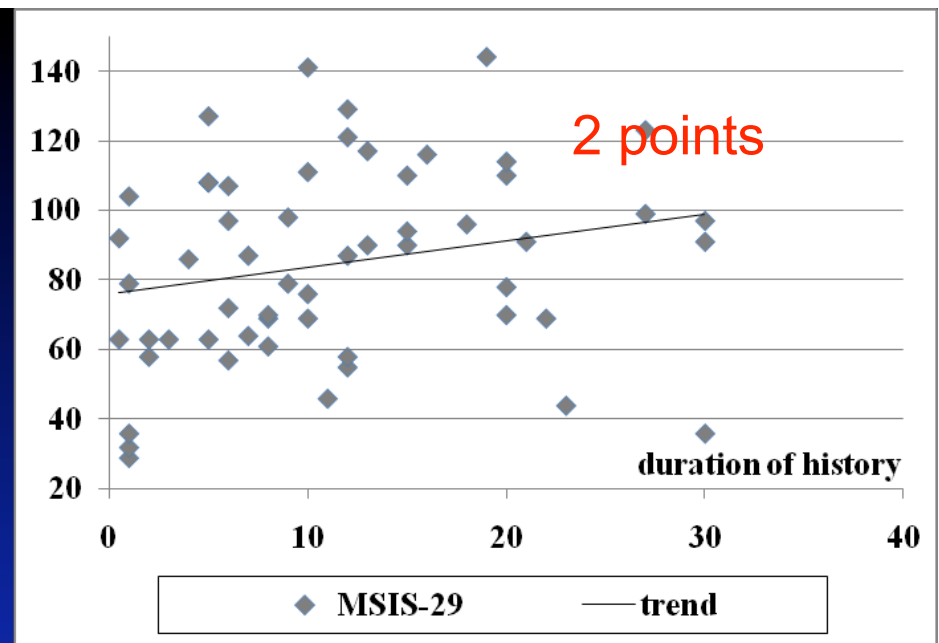
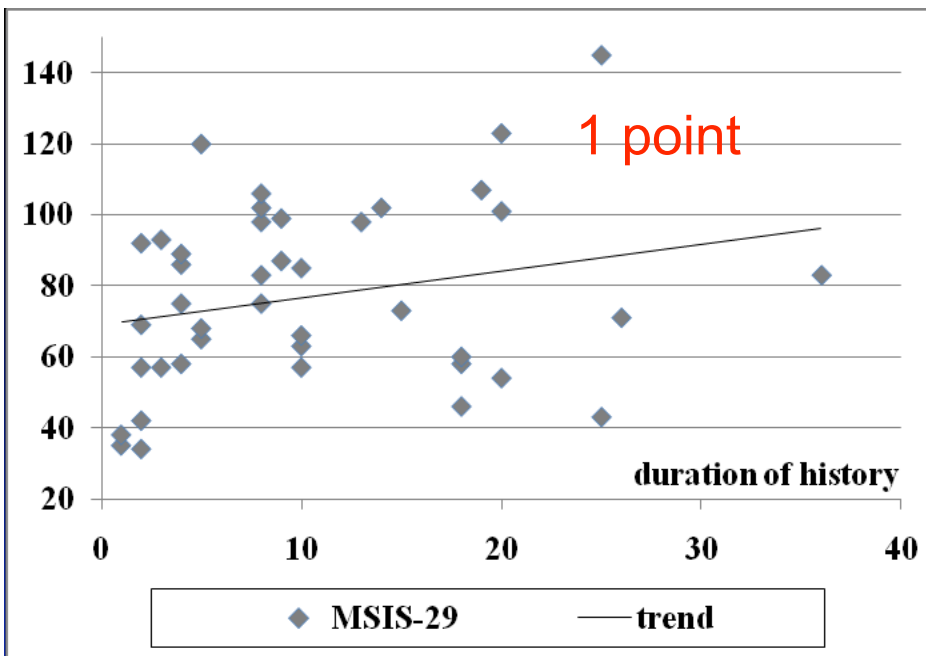
Heat intolerance compared to cumulated scores of venous lesions. P values are >0.05

CCSVI and clinical impact of MS

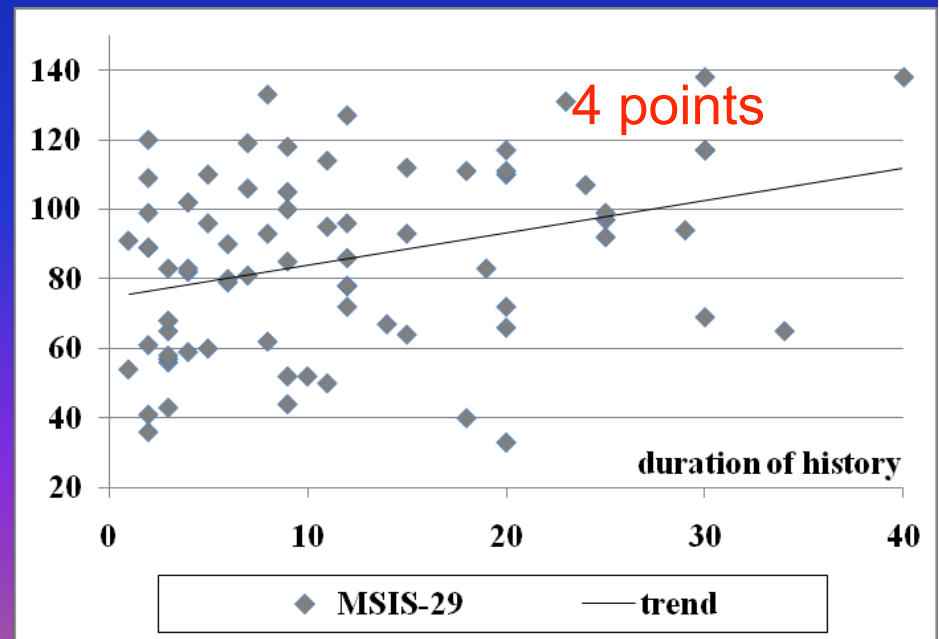
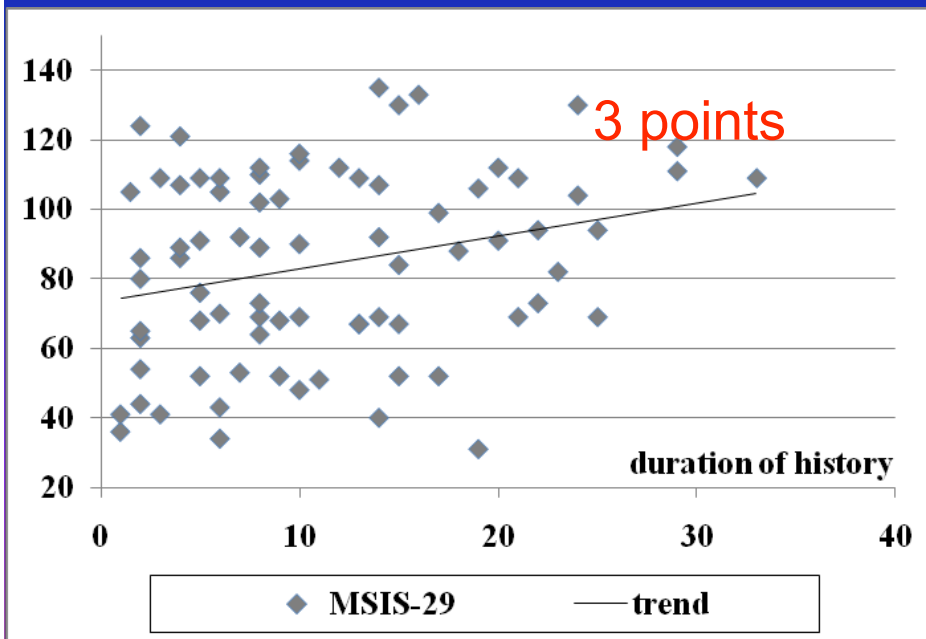
- There were revealed statistically significant correlations between severity of CCSVI and clinical burdens measured with MSIS-29
- and FSS questionnaires
- no significant correlation existed between heat intolerance and degree of CCSVI
- no significant correlation between the number of diseased veins and clinical impacts of MS were found

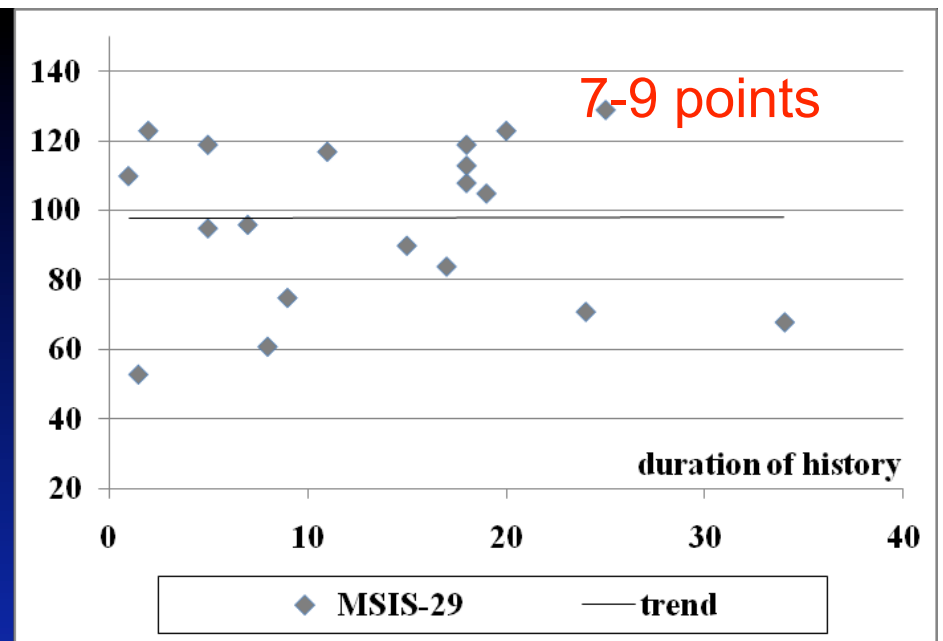
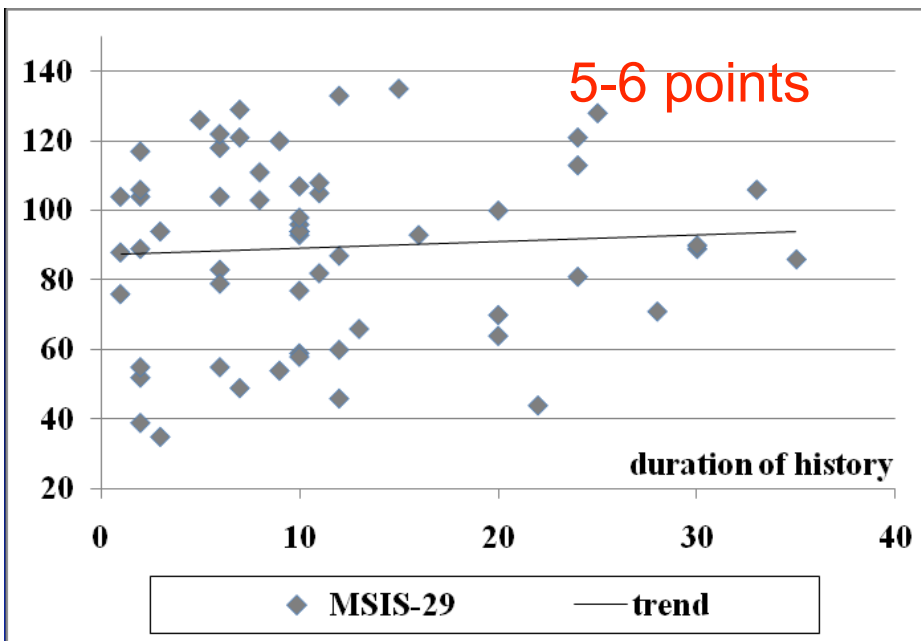


Correlation between clinical burden of MS assessed using MSIS-29 and duration of MS history.
P values are <0.05

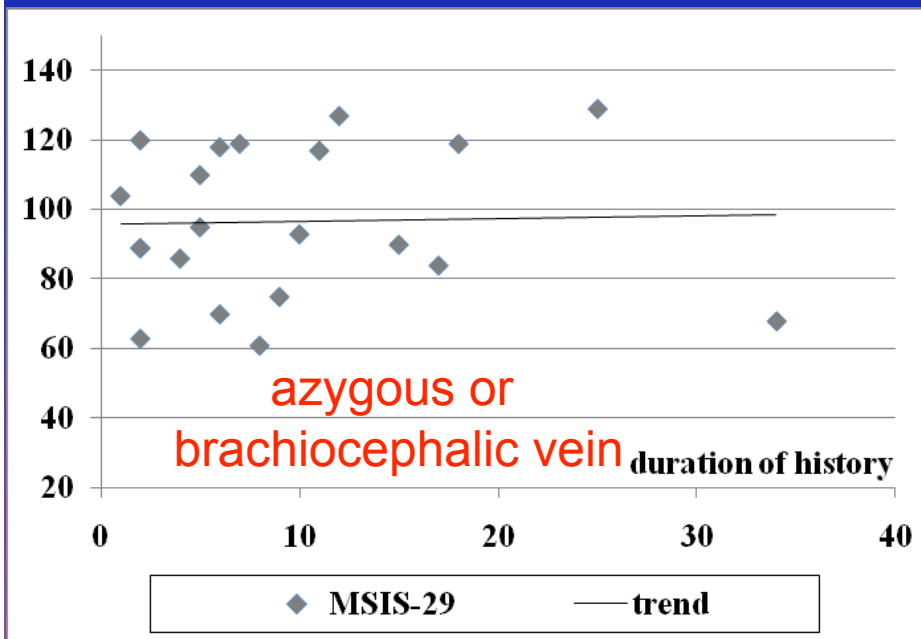


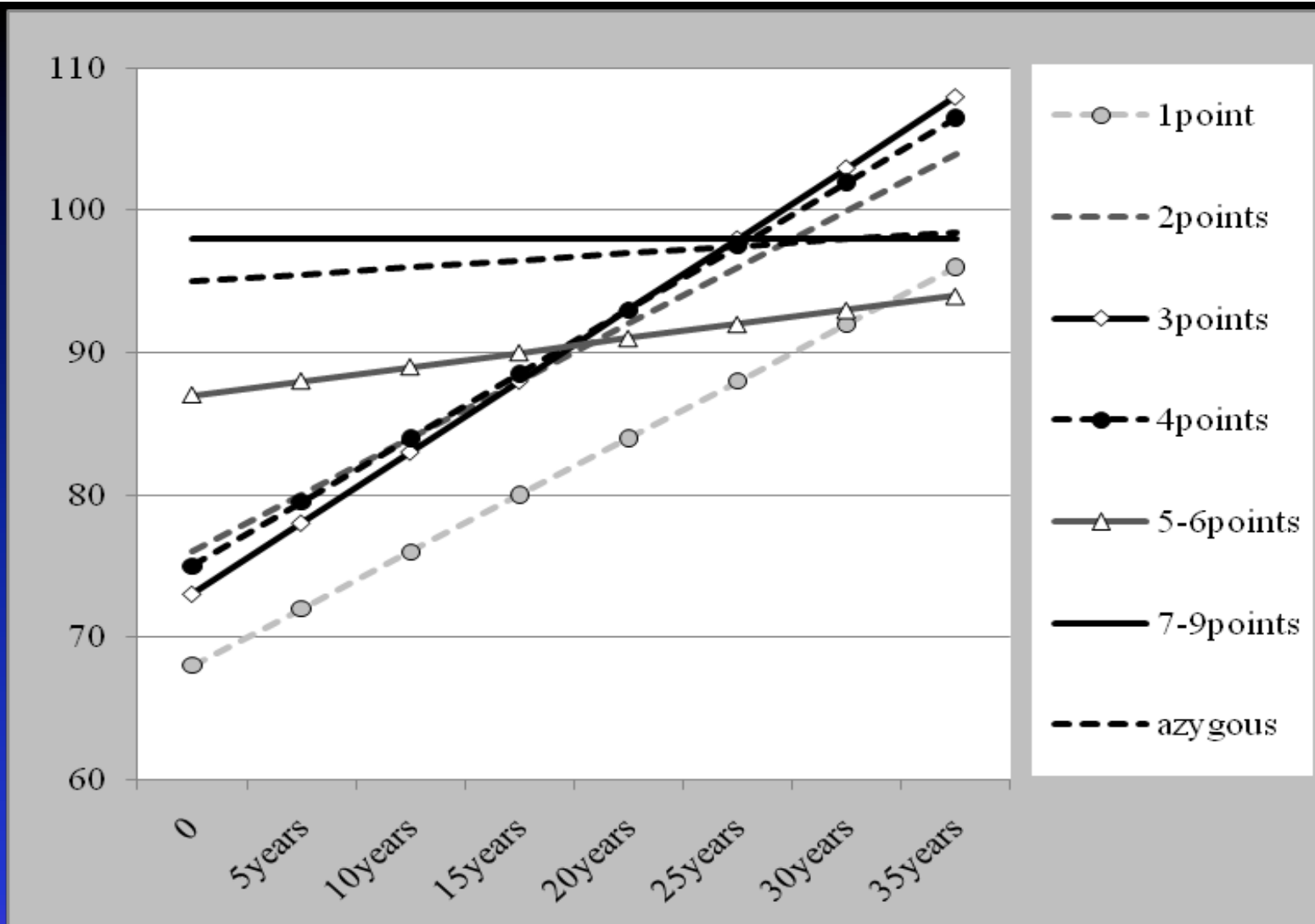
Correlation between clinical burden of MS assessed using MSIS-29 and duration of MS history





Correlation between clinical burden of MS assessed using MSIS-29 and duration of MS history





Correlation between MSIS-29 and duration of MS history for different scores of venous lesions. “1 point” vs. “7-9 points” (P=0.001), “1 point” vs. “azygous” (P=0.002), “5-6 points” vs. “7-9 points” (P=0.001), “5-6 points” vs. “azygous” (P=0.001)

CCSVI and MS

- statistical analysis of trend lines that represented clinical courses of the patients with different severity or localization of venous lesions revealed significant differences groups of the patients with different degree of CCSVI

Conclusions

- Prevalence of CCSVI among MS is very high and it can be concluded that CCSVI is significantly correlated with MS.
- However, it should be remembered that for the time being such prevalence in healthy population is not known.

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Conclusions

- These vascular abnormalities are rather stable, they progress very slowly and no new lesions develop in the adulthood
- MS does not seem to have a significant impact on the degree and progression of these venous pathologies

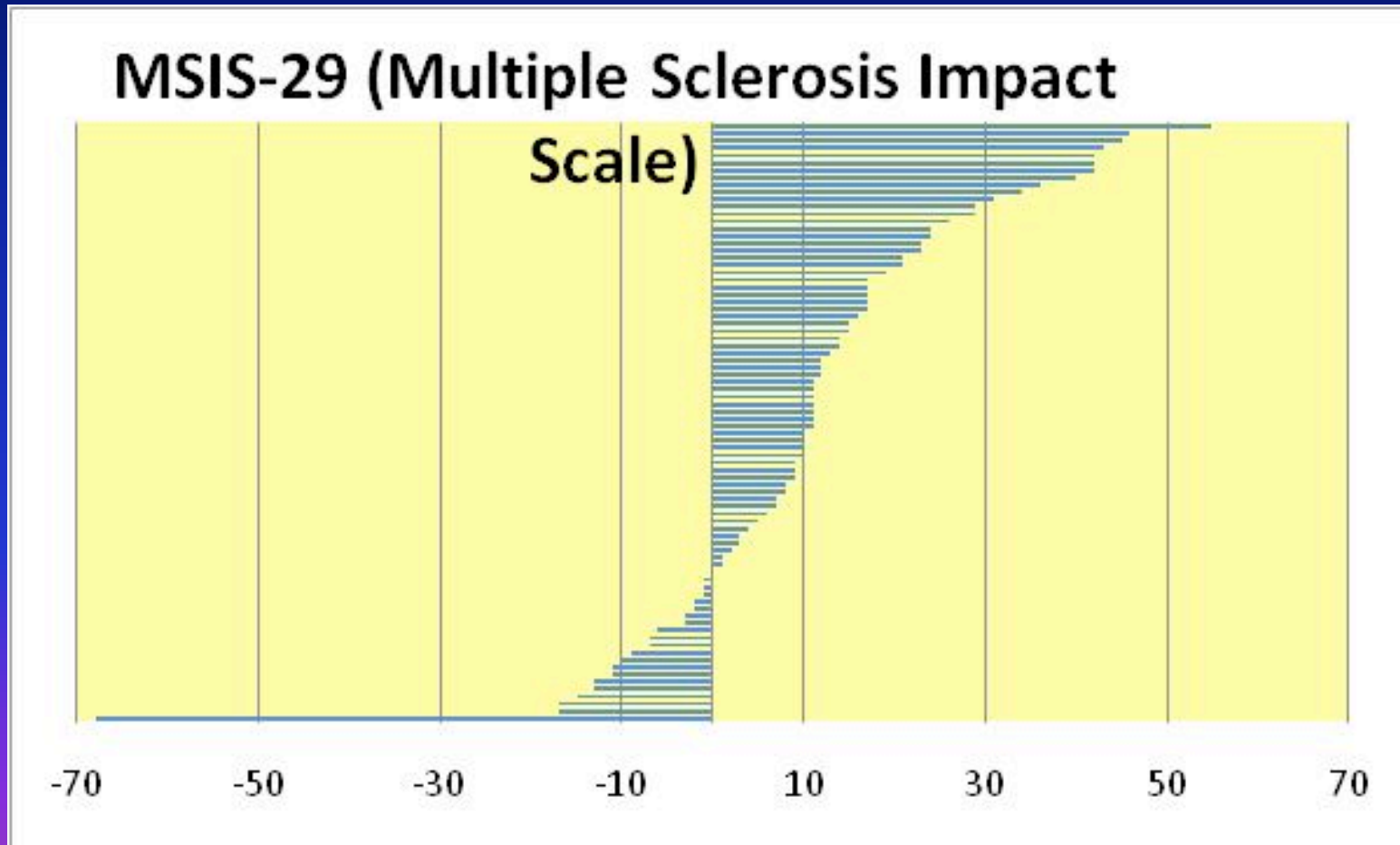
Conclusions

- These venous lesions are not likely to be a direct trigger of MS.
- There may be another factor(s) that initiates pathologic processes in the central nervous system.
- It could be conjectured that a combination of CCSVI and that not yet recognized factor(s) leads to the clinically overt MS.

Conclusions

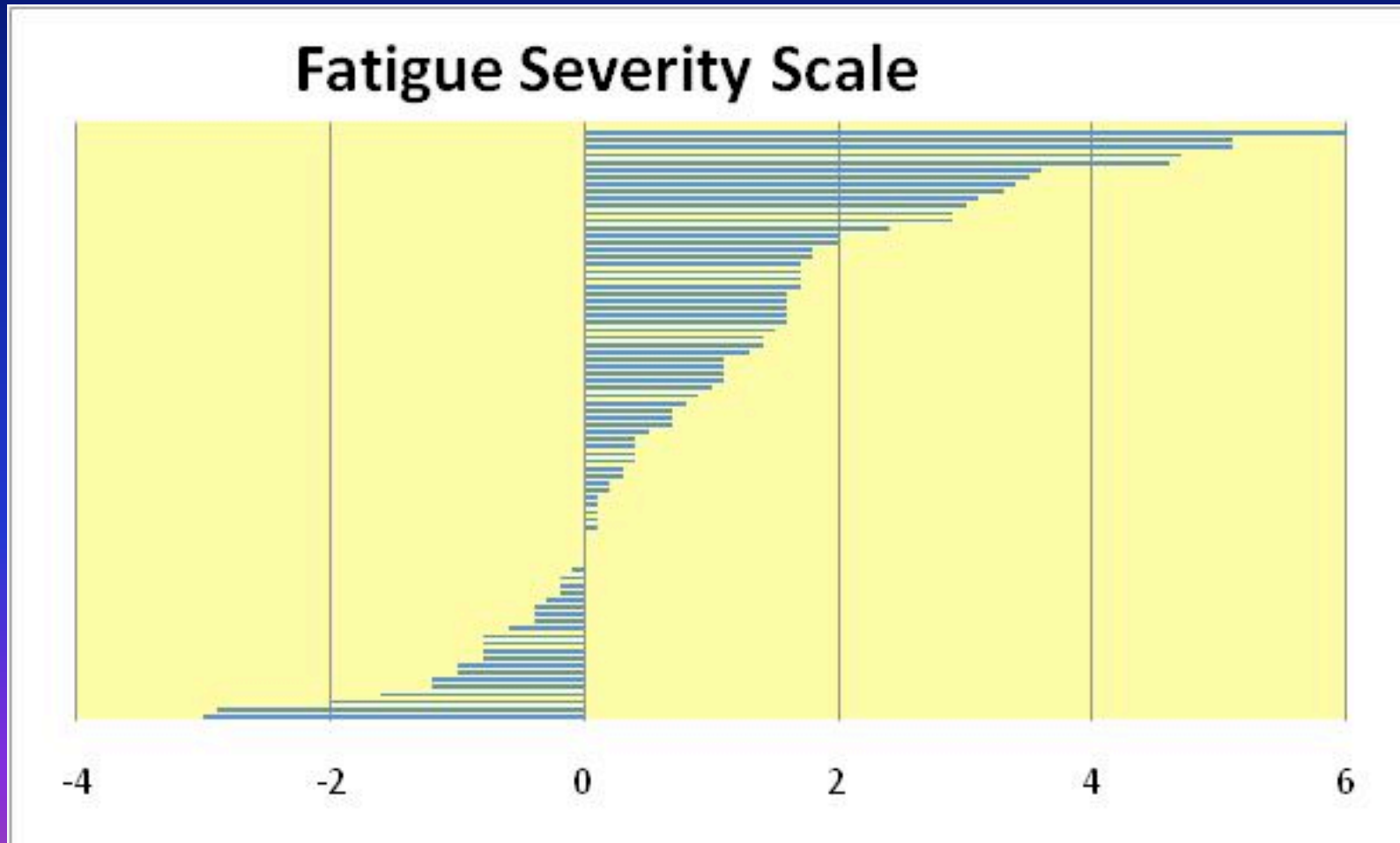
- Heat intolerance, the symptom that is very typical for MS, does not seem to be directly associated with CCSVI
- Chronic fatigue, the other very typical sign of MS, was significantly correlated with the severity of CCSVI, but this effect was rather small
- Perhaps, those global neurologic symptoms are related mainly to other pathophysiologic factors and not primarily to CCSVI

Clinical results after 6 months (94 patients)

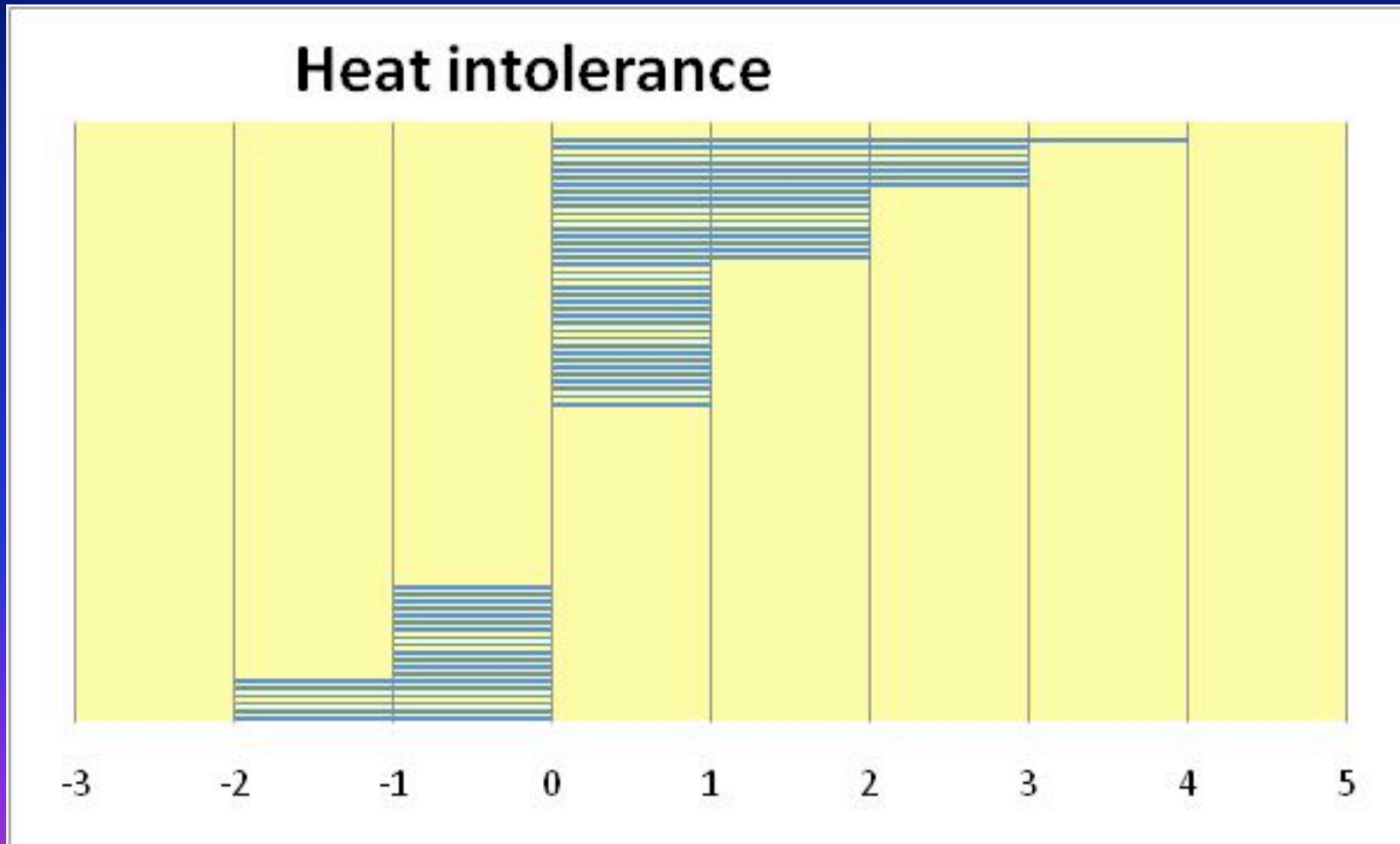


Clinical results after 6 months

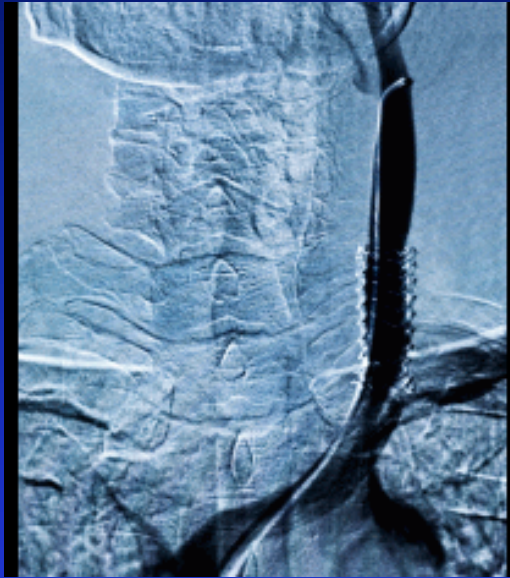
(94 patients)



Clinical results after 6 months (94 patients)



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"Venous Endovascular Forum"
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