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TITLE: Plasma Endothelial Microparticles in Multiple Sclerosis: A Novel Metric Assay of Disease Activity and Response to Treatment

PRINCIPAL INVESTIGATOR: Jonathan Steven Alexander, Ph.D.
Alireza Minagar, M.D.

CONTRACTING ORGANIZATION: Louisiana State University Health Sciences Center
Shreveport, LA 71103

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PREPARED FOR: U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

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REPORT DOCUMENTATION PAGE

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7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Louisiana State University Health Sciences Center Shreveport, LA 71103				8. PERFORMING ORGANIZATION REPORT NUMBER	
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14. ABSTRACT Purpose: The purpose of this research project is to validate plasma microparticle profiling in multiple sclerosis with the goal of defining microparticle species which have value as predictive or prognostic biomarkers. Additionally, the findings of this project Scope: These finding apply to both civilian and military patients with MS. Major Findings: We have now linked iron deposits in specific brain structures in MS with particular microparticle species; some of these data have been presented at the last international society for neurovascular disease. Up to date report: We are continuing with patient recruitment and processing of samples and are collecting timed patient samples after recruitment towards completion of the project.					
15. SUBJECT TERMS Multiple Sclerosis, Endothelial, Inflammation, Adhesion molecules					
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Introduction

The purpose of this research project is to validate plasma endothelial cell-derived microparticle profiling as predictive / prognostic biomarkers in multiple sclerosis. The main objectives are to demonstrate which microparticles are most significantly associated with disease activity, and how plasma microparticle profiles are changed by different patient therapies.

We and other labs have described endothelial microparticles as tiny (0.1um) cell derived membrane fragments which are shed into the bloodstream during periods of cell stress that often carry inflammatory biomarkers on their surface. In this way, microparticles represent a 'snapshot' of the vascular surface which can be safely and inexpensively analyzed. This type of approach provides similar information as an MRI scan with respect to blood brain barrier failure and vascular dysfunction. These particles will be isolated from collected plasma samples and labeled using antibodies which are studied by flow cytometry. The cost each assay is much lower and does not involve irradiation or MRI. Importantly, this study will provide important mechanistic and pathologic insights into how the severity of disease can be linked with the formation, release and character of these particles. The application of this approach may allow earlier treatment of MS patients to arrest their disease prior to progressive phases of MS.

Currently, despite the finding that microparticles are increased in active MS, little information is available as to how therapy affects microparticle numbers, or different classes of microparticles. Preliminary evidence from our lab indicates that some microparticle sub-types represent more sensitive and accurate markers of disease which could be used to quickly and inexpensively track disease activity in MS. The successful development of this approach might lead to improved and more widely available tests and earlier treatment of MS, vital to effective treatment of this condition.

Body

The research was originally approved by the Louisiana State University Health Sciences Center – Shreveport's Institutional Review Board (IRB) on 08-26-2010. Annual continuing review was obtained from the IRB on 02-25-2011 and again on 08-19-2011, as the IRB ruled for a 6-month review period for this research. Supporting documentation of these approvals is attached in the appendices.

As of March 11, 2012, there have been 13 subjects with multiple sclerosis (MS) and two healthy controls (HC) enrolled into this research. The first three subjects with MS were viewed by the U.S. Department of Defense (DOD) as protocol deviations, as they were enrolled prior to the DOD's final approval of the local IRB's approved documents, although institutional final approval was obtained. Therefore, it was decided that the samples from these three subjects could not be used in the research study, and they were destroyed (IRB approved on 04-04-2011). The DOD requested a voluntary hold be placed on the research until the agency had completed a thorough review of all site IRB approved documents. This voluntary hold request was approved on 04-04-2011. Final DOD approval to proceed was granted in May 2011. Research activities resumed at that time.

Since study initiation, there have been five protocol deviations: the three samples collected prior to final DOD approval of all IRB approved documents, and two deviations concerning subjects not

having a blood draw at one month, as it was unclear to research staff whether the samples needed to be collected since these subjects had not yet started medication for multiple sclerosis. Since this time, the research protocol and objectives have been thoroughly reviewed with all research staff, and we do not anticipate any further issues in collecting plasma samples. The report of these 1 month deviations is attached in the appendices.

After careful consideration and discussions about the recruitment challenges to this study, we felt it would be best to revise the Inclusion/Exclusion criteria to include subjects who are current smokers. We do not feel that the inclusion of smokers in the study will affect the results in any way. Further, we feel there will be no safety issues as a result of this inclusion revision. Documentation of IRB approval of the revision and correspondence with the DOD is attached in the appendices.

CD31neg54pos			
	Cor Coef	Sig.	N
CD31neg54pos2	0.392	0.004	52

CD31neg51pos			
	Cor Coef	Sig.	N
CD31neg54pos2	0.381	0.005	52
Volume of T1 hypointense lesions in cubic millimetres	0.282	0.05	49
Siexnax 2.5 with inpainting normalized grey Matter Volume	0.309	0.026	52
Siexnax 2.5 with inpainting normalized neocortical volume	0.321	0.02	52

CD31neg51pos_54pos			
	Cor Coef	Sig.	N
CD31neg54pos2	0.448	0.001	52

Volume of T2 hyperintense lesions in cubic millimetres			
	Cor Coef	Sig.	N
Volume of T1 hypointense lesions in cubic millimeters	0.801	0	49
Siexnax 2.5 with inpainting normalized White Matter Volume	-0.407	0.003	52
Siexnax 2.5 with inpainting normalized lateral ventricular volume	0.482	0	52
Siexnax 2.5 with inpainting normalized neocortical volume	-0.184	0.191	52

HC			
	Cor. Coe	Sig	N
globus_total_tphase_ppb_mean	-0.53	0.002	33

RRMS			
	Cor. Coef	Sig.	N
dgm_tphase_ppb_mean	0.344	0.035	38
thal_total_tphase_ppb_mean	0.413	0.01	38

SPMS			
	Cor. Coef	Sig.	N
caudate_total_tphase_ppb_mean	-0.354	0.029	38

CD31neg54pos			
	Cor. Coef	Sig.	N
globus_total_tphase_ppb_mean	0.556	0.039	14

CD31neg51pos			
	Cor. Coef	Sig.	N
putamen_total_tphase_ppb_mean	0.697	0.006	14

Tables I and II (Table I, left conventional MRI scores, Table II – non-conventional MRI scores pairing with microparticle profiling) . Data presented at 2nd International Society for Neurovascular Disease, Alexander, JS, Chaitanya, V and Minagar, A. ‘Multiple Sclerosis and Cerebrovascular Endothelial Dysfunction’ (Invited Talk,Perfusion, Hypoxia, Ischemia/Reperfusion Session, Tues, Febr)..

Aim 1. Determine the extent to which measurement of plasma endothelial microparticles (EMP) bearing seven adhesion molecules CD31 (EMP^{CD31+}), CD51 (EMP^{CD51+}), CD62E (EMP^{CD62E+}), CD146 (EMP^{CD146+}), CD54 (EMP^{CD54+}), and annexinV (EMP^{annexinV+}), and platelet microparticles carrying CD62P molecule (PMP^{CD62+}) will correlate with MRI (+/-contrast) and EDSS scores in relapsing remitting multiple sclerosis (RRMS) under baseline (without any treatment with corticosteroids or beta-interferons), following therapy and during relapses. (Total time = 24 months).

Progress. In order to validate our analytical approach on the flow cytometry instruments currently in use at the LSU Health Sciences Center in Shreveport Flow Cytometry Core laboratory, we have analyzed 104 multiple sclerosis and control plasma samples, which were provided by Dr. Robert Zivadinov, MD (Buffalo Neuroimaging Analysis Center, Buffalo, NY) through an already approved IRB protocol now active in Buffalo. These microparticle samples were immune-labeled and analyzed by flow cytometry for the markers **Annexin V⁺**, **CD31⁺**, **CD51⁺** and **CD54⁺** by flow cytometry. We also analyzed plasma levels of TNF-a and IL-12/23 in these samples by enzyme linked immunosorbent analysis (ELISA). Dr. Robert Chervenak, the Director of the flow cytometry core laboratory and Ms. Deborah Chervenak (Core

laboratory manager) are assisting us with the measurement and interpretation of plasma microparticles in MS and control samples.

We have preliminarily found that CD31/Annexin-V⁺ plasma microparticles (which appear to represent cell fragments derived from erythrocytes i.e. red blood cells) appear to be significantly elevated in relapsing remitting multiple sclerosis (MS) vs. controls (control = 3.904± 0.7116/ul vs. RRMS = 6.250± 0.8569, p=0.0445, two-tailed t-test). This is potentially an extremely important and novel finding which suggests that red cell fragmentation is increased in this form of MS, and may provide the first direct link to a source of increased tissue iron deposition which is characteristic for multiple sclerosis. The results of these data and their relationships to clinical findings are included in the attached report 'Buffalo Project Output.pdf'.

These findings are currently being summarized in our first manuscript from this project entitled: 'MS Plasma microparticle profiles associated with conventional and novel MRI markers: Correlation with CNS Iron Deposition' (Alexander, JS, Zivadinov, R, Weinstock-Guttman, Ramanathan, M, Monceaux, CP, Chaitanya, VG, Minagar, A, J. Neuroinflammation, in preparation).

Task 2. Use Gadolinium-contrast enhanced MRI to relate blood brain barrier changes to plasma EMP and PMP at baseline, following treatment with beta-interferons and during relapses. All enrolled MS patients routinely undergo MRI analysis.

Progress. With regard to our patient samples collected at LSU Health Sciences Center in Shreveport, we have now consented, collected, and processed 9 baseline MS samples and 2 control specimens, as well as 7 follow-up MS samples, for flow cytometry and are awaiting a large enough grouping of samples to begin analysis of cytokines by ELISA since each ELISA kit must be used to evaluate ~75 plasma samples simultaneously.

We have obtained baseline EDSS and MRI findings plus other clinical descriptors for every subject (excluding controls). These data will be used at the end of the study to correlate these observations with PMP findings. Each subject with MS has been initiated on interferon-beta 1b at 8 million units subcutaneously once every other day. So far, all study subjects have tolerated the treatment and have not voiced any complaints about side effects of the medication or any adverse events. In general, the study subjects report subjective improvements on treatment with interferon-beta. No local injection adverse reactions, including skin necrosis or infections, have been reported. Dr. Francisco A. Luque has now actively joined our team to assist in identifying additional treatment naïve patients from the Overton-Brooks VA Medical Center (VAMC) in Shreveport, LA but has not yet recruited participants from our VAMC.

Task 3. Determine the statistical correlations among the plasma EMP, plasma PMP, and EDSS at baseline, following treatment with beta-interferons and during relapses. (24 months). We plan to correlate these markers once all of these samples are collected.

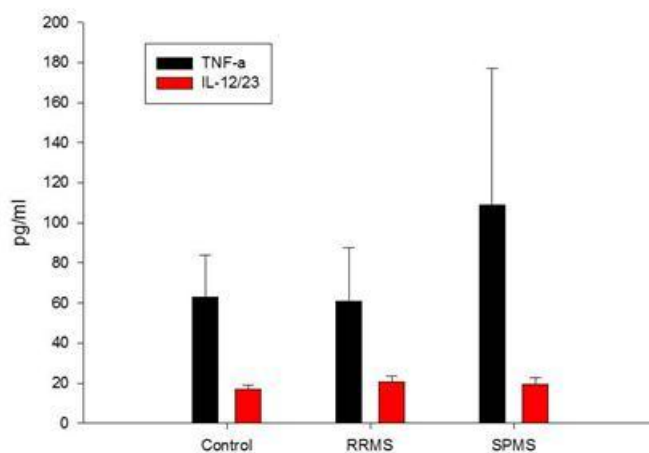
Progress. To date, 10 subjects with multiple sclerosis (MS) and 2 healthy controls (HC) have successfully been entered into this research project. An additional 3 subjects were initially drawn but were not included because although we had IRB approval, we had not received final approval from the DOD. These are being treated as protocol variations. This would have brought

our subject initiation to 13 MS. We have been able to successfully match the MS subjects with healthy controls on the basic demographic variables of age range, gender, and race. This is an accomplishment we feel we will be able to maintain throughout the duration of the study. Dr. Minagar has identified over 60 potential healthy controls which will be recruited as necessary to age and gender match MS recruits. The Study Follow Up Schedule detailing when each participant is/was scheduled for blood drawings is attached in the appendices.

Aim 2. Determine how the MAPP profile of plasma EMP, plasma PMP, correlate with levels of pro-inflammatory cytokines and matrix metalloproteinases (MMPs), at baseline following treatment with beta-interferons and during relapses?

Task 1. Determine plasma levels of Th1 cytokines (TNF- α , IL-1 β , and IFN- γ , IL-12, IL-17 and IL-23) and the correlation between cytokines and clinical disease. (24 months).

Progress. We have now performed cytokine ELISAs on TNF- α and IL-12/23 from the samples which were obtained from MS samples collected from the Buffalo Neurosciences Group (**Fig. 1**). We found that although serum TNF- α levels in SPMS were elevated compared to either healthy controls or RRMS, the data did not reach statistical significance ($p > 0.05$) (**see fig. 1**). Individual data points may be further re-analyzed to examine if individual samples might be further correlated with EDSS disease activity or MRI activity. These data will be incorporated into our *'MS Plasma microparticle profiles associated with conventional and novel MRI markers: Correlation with CNS Iron Deposition'* (Alexander, JS et al., *J. Neuroinflammation, in preparation*).



Task 2. Determine plasma and plasma levels of (MMP-8, MMP-9, TIMP-1) and the correlation between MMPs and MMAP levels. (24 months). We have not yet collected sufficient patient samples to perform these analyses, but intend to investigate this using the cohort of samples which have been supplied by Dr. Zivadinov.

Aim 3 : Determine the relationship between EMP, PMP and elevated levels of pro-inflammatory cytokines and MMPs with trans-endothelial migration and barrier function, at baseline, following beta-interferon therapy and during MS relapses.

Task 1. Determine how EMP and PMP in MS patients affect blood brain barrier. **Task 2.** Demonstrate how blockade of individual cytokines and MMPs recognized during active disease affect blood-brain endothelial barrier dysregulation by EMPs. These types of experiments are routinely performed in the PIs laboratory (see recent publication by **Chaitanya GV, Cromer WE, Wells SR, Jennings MH, Couraud PO, Romero IA, Weksler B, Erdreich-Epstein A, Mathis JM, Minagar A, Alexander JS** *Gliovascular and cytokine interactions modulate brain endothelial barrier in vitro. J Neuroinflammation. 2011 Nov 23;8:162.*) **Task 3.**

Determine how EMP and PMP in MS patients affect trans-endothelial monocyte migration. **Task 4.** Determine how individual cytokines and MMPs recognized during active disease affect trans-endothelial monocyte migration. Similarly, this approach has been developed and validated in the PIs laboratory (**Carpenter and Alexander, 2008**). **Task 5.** Examine how EMPs affect expression of endothelial junctional proteins. Our lab developed this concept and approach (see **Minagar et al., 2003, 2003b**). Before initiating an extensive comparison, we are still collecting sufficient samples to begin these studies.

Key Research Accomplishments

- 1) We have established a work-flow from patient recruitment, blood sampling and data capturing,
- 2) We have validated our flow-cytometric approach with Dr. Robert Chervenak
- 3) Have established and validate the reproducibility of enzyme linked immunosorbent analysis in our assays.

Our research shown in **Table I** indicates that CD31⁻/CD51⁺ microparticles are positively correlated with the volume of T1 hypointense lesions, Siemax 2.5 inpainting of grey matter and neocortex volume.

Our research in **Table II** indicates:

- 5) that in healthy controls, CD31⁻/CD54⁺ microparticles were positively correlated with globus total tphase ppb (iron content)
- 6) that in RRMS, that CD31⁺/CD51⁺ microparticles were positively associated with deep gray matter tphase ppb (iron content)
- 7) that in relapsing remitting MS, that CD31⁺/CD54⁺ microparticles were also positively correlated with thalamus tphase ppb (iron content)
- 4) that in RRMS, CD31⁻/CD54⁺ microparticles were also positively associated with caudate total tphase ppb (iron content)
- 5) that in SPMS, CD31⁻/CD54⁺ microparticles were statistically and positively associated with globus total tphase ppb (iron content)
- 6) that in SPMS CD31⁻/CD51⁺ microparticles were statistically and positively correlated with putamen total tphase ppb (iron content)

Reportable Outcomes

The most important reportable outcomes are found in Table II, regarding iron deposition in the brain in MS and the presence of particular microparticle species. Several candidate microparticle species have been identified which are positively correlated with the elevated deposition of iron within specific structures in the brain associated with MS pathophysiology. The fact that these microparticles are associated with iron suggests that processes which are active during the formation of these particles also permits the trans blood brain barrier penetration of iron sources e.g. red cells, hemoglobin, transferrin, hemosiderin. The presence of iron deposition will contribute to 'Fenton' chemistry in the central nervous system (the formation of toxic/signaling levels of hydroxyl radicals) which is an important initial step leading to the development of several MS related pro-inflammatory processes.

The findings from the Buffalo study are currently being summarized in our first manuscript from this project entitled: '*MS Plasma microparticle profiles associated with conventional and novel MRI markers: Correlation with CNS Iron Deposition*' (Alexander, JS, Zivadinov, R, Weinstock-Guttman, Ramanathan, M, Monceaux, CP, Chaitanya, VG, Minagar, A, *J. Neuroinflammation, in preparation*).

Data was presented at the 2nd International Society for Neurovascular Disease, Alexander, JS, Chaitanya, V and Minagar, A. 'Multiple Sclerosis and Cerebrovascular Endothelial Dysfunction' (Invited Talk, Perfusion, Hypoxia, Ischemia/Reperfusion Session, Mon, Feb 20).

Conclusions.

We conclude that this approach is valid and has so far provided important findings. Additional anticipated studies will increase the numbers of patients and should hopefully permit more in depth analysis of microparticle species which have predictive power. The mechanistic studies in Aim #3 should help to better define the underlying significance of microparticles as causes, not only markers of MS stress and injury.

References

Chaitanya GV, Cromer WE, Wells SR, Jennings MH, Couraud PO, Romero IA, Weksler B, Erdreich-Epstein A, Mathis JM, Minagar A, **Alexander JS**. [Gliovascular and cytokine interactions modulate brain endothelial barrier in vitro](#). J Neuroinflammation. 2011 Nov 23;8:162.

Carpenter AC, Alexander JS. [Endothelial PKC delta activation attenuates neutrophil transendothelial migration](#). Inflamm Res. 2008 May;57(5):216-29.

Minagar A, Long A, Ma T, Jackson TH, Kelley RE, **Ostanin DV**, Sasaki M, Warren AC, Jawahar A, Cappell B, **Alexander JS**. [Interferon \(IFN\)-beta 1a and IFN-beta 1b block IFN-gamma-induced disintegration of endothelial junction integrity and barrier](#). Endothelium. 2003;10(6):299-307.

Minagar A, **Ostanin D**, Long AC, Jennings M, Kelley RE, Sasaki M, **Alexander JS**. [Serum from patients with multiple sclerosis downregulates occludin and VE-cadherin expression in cultured endothelial cells](#). Mult Scler. 2003 Jun;9(3):235-8.

NOTICE OF COMMITTEE ACTION
Progress Report for Continuing Review

Location of Subject Population

LSUHSC Off-Site: VA BRF Shriners Other:

If protocol includes VA patients, R&D Committee must review and approve protocol prior to entering VA patients. If protocol includes VA patients, send a copy of this report to VA Medical Research Service (151).

Principal Investigator: J. Steven Alexander, PhD

Telephone: (318) 675-0000

Department: Physiology

Section:

Protocol Title: Plasma Endothelial Microparticles in Multiple Sclerosis: A Novel Metric Assay of Disease Activity and Response to Treatment

The Institutional Review Board has evaluated the submission in accordance with the guidelines established for activities involving human research subjects.

Recommendation of Institutional Review Board:

- | | |
|---|--|
| <input checked="" type="checkbox"/> Approved | <input type="checkbox"/> Administrative Hold |
| <input type="checkbox"/> Deferred for Substantive Changes | <input type="checkbox"/> Lapse in Continuing Review Approval |
| <input type="checkbox"/> Deferred for Non-substantive Changes | <input type="checkbox"/> Study Suspended |
| <input type="checkbox"/> Approved in Principle | <input type="checkbox"/> Study Terminated |
| | <input type="checkbox"/> Disapproved |

Approval Period: Start: 8/26/2011 **End:** 8/25/2012 **Submit next review in (mo/yr):** June 12

Risk Level: minimal risk

Review Duration: 1 year(s)

NOTES:

1. There is no "grace period" allowed that extends the conduct of research beyond the last date of IRB approval. To prevent a lapse in IRB approval, submission of the Continuing Review must be received in a time to be processed before the lapse date. (45 CFR Part 46.109(e))
2. If IRB approval lapses, all activities relating to enrollment and the participation of human subjects are to be suspended immediately. The Principal Investigator must immediately contact the IRB and submit a list of research subjects to the Chair.
3. When corresponding with the IRB, use the assigned IRB protocol number.

8/19/11
IRB Review Date

Mary Buffington
Mary Buffington, MD
Institutional Review Board

Protocol No.: H11-011

Please see below for any IRB requests: (i.e - Revisions, Directives, Reminders or other important information):

Please be reminded that this study was on Voluntary Hold at the request of the sponsor. Although you have received approval to remove the hold from the IRB you should not re-initiate study activities until you have final approval from the Sponsor.

IRB Approval After Revisions:

Institutional Review Board

Date

APPROVED

NOTICE OF COMMITTEE ACTION
Progress Report for Continuing Review

Location of Subject Population

LSUHSC Off-Site: VA BRF Shriners Other:

If protocol includes VA patients, R&D Committee must review and approve protocol prior to entering VA patients. If protocol includes VA patients, send a copy of this report to VA Medical Research Service (151)

Principal Investigator: J. Steven Alexander, PhD

Telephone: (318) 675-0000

Department: Physiology

Section:

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Recommendation of Institutional Review Board:

- | | |
|---|--|
| <input checked="" type="checkbox"/> Approved | <input type="checkbox"/> Administrative Hold |
| <input type="checkbox"/> Deferred for Substantive Changes | <input type="checkbox"/> Lapse in Continuing Review Approval |
| <input type="checkbox"/> Deferred for Non-substantive Changes | <input type="checkbox"/> Study Suspended |
| <input type="checkbox"/> Approved in Principle | <input type="checkbox"/> Study Terminated |
| | <input type="checkbox"/> Disapproved |

Approval Period: Start: 2/26/2011 **End:** 8/25/2011 **Month of next review:** June 11

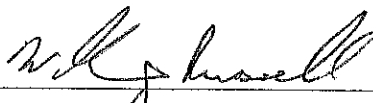
Risk Level: minimal risk **Review Duration:** 6 month(s)

Possibility of protocol **SUSPENSION**:
If revisions are not received and approved by prior year's end date, all activities relating to the enrollment or participation of humans in the above named project are suspended

2/25/2011

Prior End Date

2/25/11
IRB Review Date



William J. Russell, Ph.D.

LSUHSC-S Institutional Review Board Reviewer

*****NOTE:** WHEN SUBMITTING YOUR REVISIONS TO THE IRB OFFICE, PLEASE SUBMIT TWO (2) REVISED COPIES OF YOUR CONSENT FORM***. Revisions should be submitted to the IRB Office for review and approval by the LSUHSC-S IRB Chairperson before proceeding with this study. ALL revisions MUST be highlighted for IRB submission. NOTE: Pharmaceutical Company funded trials require a fully executed contract before study can be initiated.

Revisions:

Protocol No.: H11-011

IRB Revisions Requested for Final Approval. Please address the following concerns:

IRB Final Approval After Revisions: _____

LSUHSC-S IRB Officer

Date

NOTICE OF COMMITTEE ACTION
Initial Review of Protocol

Location of Subject Population

LSUHSC Off-Site: VA BRF Shriners Other:

If protocol includes VA patients, R&D Committee must review and approve protocol prior to entering VA patients. If protocol includes VA patients, send a copy of this report to VA Medical Research Service (151)

Principal Investigator: J. Steven Alexander, PhD

Telephone: (318) 675-0000

Department: Physiology

Section:

Protocol Title: Plasma Endothelial Microparticles in Multiple Sclerosis: A Novel Metric Assay of Disease Activity and Response to Treatment

This is to certify that the IRB Chairperson or Designee reviewed the above project. The project was evaluated in accordance with the guidelines established for activities involving human research subjects.

Recommendation of Institutional Review Board:

- | | |
|---|--|
| <input checked="" type="checkbox"/> Approved Protocol | <input type="checkbox"/> Study Suspended |
| <input type="checkbox"/> Deferred for Substantive Changes | <input type="checkbox"/> Study Terminated |
| <input type="checkbox"/> Deferred for Non-Substantive Changes | <input type="checkbox"/> Lapse in Continuing Review Approval |
| <input type="checkbox"/> Administrative Hold | <input type="checkbox"/> Disapproved |
| <input type="checkbox"/> Approved in Principle | |

Expedited review category:

2 - Collection of blood samples by finger stick, heel stick, ear stick, or venipuncture as follows: (a) from healthy, non-pregnant adults who weigh at least 110 pounds. (b) from other adults and children, considering the age, weight, and health of the subjects, the collection procedure, the amount of blood to be collected, the frequency with which it will be collected.

Description:

This research proposal intends to validate plasma endothelial cell-derived microparticle profiling as a predictive/prognostic biomarker in multiple sclerosis. The objectives are to demonstrate which microparticles are most significantly associated with disease activity, and how plasma microparticle profiles are changed by different patient therapies.

Approval Period: Start: 8/26/2010 End: 2/25/2011

ICF Version:

Protocol Date:

The Date of Your Next Review Is January 2011

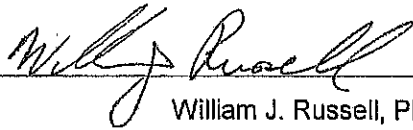
Inv Broch Date:

Risk Level: minimal risk **Review Duration:** 6 month(s)

- NOTE:
1. Principal Investigator must attach Investigational Drug Information Record to the subject's chart!!!
 2. A copy of the signed Consent Form MUST be on the subject's chart. The Consent Form signatures may be obtained only by the Principal Investigator or one of the listed Co-investigators. (SOP, pp 9.01-9.02)
 3. You are required to notify immediately, in writing, the Institutional Review Board for Human Research of any serious adverse reactions to this research protocol. (SOP, p. 10.01)
 4. In corresponding with the IRB, use the assigned protocol number.
 5. If this protocol is audited, the PI must submit the Audit Report to the IRB.
 6. If IRB approval lapses prior to notice of reapproval, all activities are suspended at the end date of the approval period.

8/26/2010

Date



William J. Russell, Ph.D.

Institutional Review Board

Approval After Revisions:

Initial

Date

The revisions to the above-referenced Protocol and Consent Form comply with IRB Guidelines, and you are now free to proceed with the study.

Revisions Page

Protocol No.: H11-011

NOTE: WHEN SUBMITTING YOUR REVISIONS TO THE GRANTS OFFICE, PLEASE SUBMIT TWO (2) COMPLETE COPIES OF YOUR IRB PROTOCOL. Revisions should be in bold print or highlighted. Revisions should be submitted to the Office of Grants Administration for review and approval by the IRB Chairperson/Designee before proceeding with this study. NOTE: Pharmaceutical Company funded trials require a fully executed contract before study can be initiated.

Initial Review of Protocol Revisions Page:

NOTICE OF IRB DETERMINATION
Modification of Protocol or Reportable New Information

Location of Subject Population

LSUHSC Off-Site: VA BRF Shriners Other:

If protocol includes VA patients, R&D Committee must review and approve protocol prior to entering VA patients. If protocol includes VA patients, send a copy of this submission to VA Medical Research Service (151).

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Recommendation of Institutional Review Board:

- | | |
|---|--|
| <input type="checkbox"/> Approved | <input type="checkbox"/> Study Suspended |
| <input checked="" type="checkbox"/> Acknowledged | <input type="checkbox"/> Study Terminated |
| <input type="checkbox"/> Approved After Revisions Accepted | <input type="checkbox"/> Disapproved |
| <input type="checkbox"/> Deferred for Substantive Changes | <input type="checkbox"/> Does Not Qualify as an Expedited Review |
| <input type="checkbox"/> Deferred for Non-Substantive Changes | Reason: _____ |
| <input type="checkbox"/> Approved in Principle | _____ |

Description: Protocol deviations - Two research subjects enrolled in the study did not have blood collected for plasma endothelial microparticle analysis because it was unclear whether the Month 1 lab should be collected if the subject has not been on their MS medication for one month prior to the Month 1 lab visit. After much discussion between the PI and sub-investigator it was determined that the Month 1 lab would be collected regardless of the length of time the patient has been on medication.

1. Subject PEM004
 - a. Date deviation occurred - August 11, 2011
 - b. Date deviation was reported to the sponsor - September 2011
 - c. Description of deviation - Because this subject is participating in the Patient Assistance Program to receive her prescribed medication, she had not yet begun taking the medication when she was seen at her Month 1 visit. PI was not available, but discussed with sub-investigator, who felt that since the subject had not been on medications for one month, he did not feel we were to collect the Month 1 labs to analyze plasma endothelial microparticles. The rest of subjects assessments were completed, but blood was not collected.
 - D. PI assessment - Protocol deviation did not have a significant impact on the safety and welfare of the study patient. The blood draw is not a safety assessment, but part of a microbiology research study.
 - E. Corrective action - Study personnel have discussed the issue of subjects who may not be taking prescribed medications right away (or one month prior to Visit Month 1). It has been determined that Month 1 labs will be collected for all subjects regardless of their time on MS medication.

2. Subject PEM006
 - a. Date deviation occurred - September 1, 2011
 - b. Date deviation was reported to the sponsor - September 2011

c. Description of deviation - Because this subject is participating in the Patient Assistance Program to receive her prescribed medication, she had not yet begun taking the medication when she was seen at her Month 1 visit. PI was not available, but discussed with sub-investigator, who felt that since the subject had not been on medications for one month, he did not feel we were to collect the Month 1 labs to analyze plasma endothelial microparticles. The rest of subjects assessments were completed, but blood was not collected.

D. PI assessment - Protocol deviation did not have a significant impact on the safety and welfare of the study patient. The blood draw is not a safety assessment, but part of a microbiology research study.

E. Corrective action - Study personnel have discussed the issue of subjects who may not be taking prescribed medications right away (or one month prior to Visit Month 1). It has been determined that Month 1 labs will be collected for all subjects regardless of their time on MS medication.

11-11-11
Date

Rita Horton
Rita Horton, MD
Institutional Review Board

Protocol No.: H11-011

The following revisions or information must be submitted to secure final IRB approval:

***NOTE: All requested revisions are to be submitted to the IRB Office for review and approval by the IRB Chairperson/Designee before proceeding.

NOTICE OF IRB DETERMINATION
Modification of Protocol or Reportable New Information

Location of Subject Population

LSUHSC Off-Site: VA BRF Shriners Other:

If protocol includes VA patients, R&D Committee must review and approve protocol prior to entering VA patients. If protocol includes VA patients, send a copy of this submission to VA Medical Research Service (151).

Principal Investigator: J. Steven Alexander, PhD

Telephone: (318) 675-0000

Department: Physiology

Section:

Protocol Title: Plasma Endothelial Microparticles in Multiple Sclerosis: A Novel Metric Assay of Disease Activity and Response to Treatment


The Institutional Review Board has evaluated the submission in accordance with the guidelines established for activities involving human research subjects.

Recommendation of Institutional Review Board:

- | | |
|---|--|
| <input checked="" type="checkbox"/> Approved | <input type="checkbox"/> Study Suspended |
| <input type="checkbox"/> Acknowledged | <input type="checkbox"/> Study Terminated |
| <input type="checkbox"/> Approved After Revisions Accepted | <input type="checkbox"/> Disapproved |
| <input type="checkbox"/> Deferred for Substantive Changes | <input type="checkbox"/> Does Not Qualify as an Expedited Review |
| <input type="checkbox"/> Deferred for Non-Substantive Changes | Reason: _____ |
| <input type="checkbox"/> Approved in Principle | _____ |

Description: Approval for Inclusion/Exclusion Criteria to now include research subjects and healthy controls who are smokers. The criteria for being a non-smoker has been revised in the protocol provided. No changes needed to the ICF.

1/26/2012
Date



John Vanchiere, MD, PhD
Institutional Review Board

Protocol No.: H11-011

The following revisions or information must be submitted to secure final IRB approval:

Frequencies

[DataSet1] C:\Users\rxz789\Documents\SPSS\VD-MRI project\CTEVD\Database\Phase I\LSU\Reduced sample size with CD31 data.sav

Statistics

		Study group	Type of disease course and not-disease groups
N	Valid	85	85
	Missing	0	0

Frequency Table

Study group

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Adult NC	33	38.8	38.8	38.8
	Adult MS	52	61.2	61.2	100.0
	Total	85	100.0	100.0	

Type of disease course and not-disease groups

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Adult non-familial NC	33	38.8	38.8	38.8
	RR	38	44.7	44.7	83.5
	SP	14	16.5	16.5	100.0
	Total	85	100.0	100.0	

T-Test

[DataSet1] C:\Users\rxz789\Documents\SPSS\VD-MRI project\CTEVD\Database\Phase I\LSU\Reduced sample size with CD31 data.sav

Group Statistics

Study group		N	Mean	Std. Deviation	Std. Error Mean
Age at Doppler visit	Adult NC	33	43.36	12.886	2.243
	Adult MS	52	47.92	10.538	1.461

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Age at Doppler visit	Equal variances assumed	1.890	.173	-1.781	83	.079
	Equal variances not assumed			-1.703	58.334	.094

Independent Samples Test

		t-test for Equality of Means			
		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
				Lower	Upper
Age at Doppler visit	Equal variances assumed	-4.559	2.560	-9.650	.531
	Equal variances not assumed	-4.559	2.677	-9.918	.799

Crosstabs

[DataSet1] C:\Users\rxz789\Documents\SPSS\VD-MRI project\CTEVD\Database\Phase I\LSU\Reduce d sample size with CD31 data.sav

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Gender * Study group	85	100.0%	0	.0%	85	100.0%

Gender * Study group Crosstabulation

Count

		Study group		
		Adult NC	Adult MS	Total
Gender	Male	15	13	28
	Female	17	39	56
	Transgender male	1	0	1
	Total	33	52	85

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.830 ^a	2	.054
Likelihood Ratio	6.126	2	.047
Linear-by-Linear Association	2.521	1	.112
N of Valid Cases	85		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is .39.

. Difference in HC vs. MS

T-Test

[DataSet1] C:\Users\rxz789\Documents\SPSS\VD-MRI project\CTEVD\Database\Phase I\LSU\Reduce
d sample size with CD31 data.sav

Group Statistics

Study group		N	Mean	Std. Deviation	Std. Error Mean
CD31pos	Adult NC	33	72.6627	12.39394	2.15751
	Adult MS	52	68.8350	12.19085	1.69057
CD31pos51pos	Adult NC	33	8.4103	4.02415	.70052
	Adult MS	52	7.8640	4.44143	.61592
CD31pos51pos_54pos	Adult NC	33	2.4530	2.75748	.48002
	Adult MS	52	3.2196	3.59830	.49899
CD31neg54pos	Adult NC	33	10.6273	5.83520	1.01578
	Adult MS	52	11.8688	7.04250	.97662
CD31neg51pos	Adult NC	33	2.8655	1.28019	.22285
	Adult MS	52	2.5533	1.30738	.18130
CD31neg51pos_54pos	Adult NC	33	.6173	1.60902	.28009
	Adult MS	52	.5781	.78571	.10896
CD31neg54pos2	Adult NC	33	2.1739	1.13558	.19768
	Adult MS	52	2.4669	1.39897	.19400

. Difference in HC vs. MS

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
CD31pos	Equal variances assumed	.016	.899	1.402	83
	Equal variances not assumed			1.396	67.413
CD31pos51pos	Equal variances assumed	.940	.335	.573	83
	Equal variances not assumed			.586	73.164
CD31pos51pos_54pos	Equal variances assumed	1.628	.205	-1.044	83
	Equal variances not assumed			-1.107	79.949
CD31neg54pos	Equal variances assumed	.366	.547	-.845	83
	Equal variances not assumed			-.881	77.144
CD31neg51pos	Equal variances assumed	.232	.631	1.082	83
	Equal variances not assumed			1.087	69.323
CD31neg51pos_54pos	Equal variances assumed	.394	.532	.150	83
	Equal variances not assumed			.130	41.817
CD31neg54pos2	Equal variances assumed	.424	.517	-1.010	83
	Equal variances not assumed			-1.058	77.953

. Difference in HC vs. MS

Independent Samples Test

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
CD31pos	Equal variances assumed	.165	3.82773	2.73073
	Equal variances not assumed	.167	3.82773	2.74096
CD31pos51pos	Equal variances assumed	.568	.54626	.95376
	Equal variances not assumed	.560	.54626	.93278
CD31pos51pos_54pos	Equal variances assumed	.300	-.76659	.73437
	Equal variances not assumed	.272	-.76659	.69239
CD31neg54pos	Equal variances assumed	.401	-1.24157	1.46963
	Equal variances not assumed	.381	-1.24157	1.40911
CD31neg51pos	Equal variances assumed	.283	.31219	.28865
	Equal variances not assumed	.281	.31219	.28729
CD31neg51pos_54pos	Equal variances assumed	.881	.03920	.26121
	Equal variances not assumed	.897	.03920	.30054
CD31neg54pos2	Equal variances assumed	.316	-.29298	.29016
	Equal variances not assumed	.293	-.29298	.27697

. Difference in HC vs. MS

Independent Samples Test

		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
CD31pos	Equal variances assumed	-1.60359	9.25905
	Equal variances not assumed	-1.64263	9.29809
CD31pos51pos	Equal variances assumed	-1.35072	2.44325
	Equal variances not assumed	-1.31269	2.40522
CD31pos51pos_54pos	Equal variances assumed	-2.22721	.69404
	Equal variances not assumed	-2.14451	.61134
CD31neg54pos	Equal variances assumed	-4.16460	1.68146
	Equal variances not assumed	-4.04738	1.56424
CD31neg51pos	Equal variances assumed	-.26194	.88631
	Equal variances not assumed	-.26089	.88526
CD31neg51pos_54pos	Equal variances assumed	-.48034	.55873
	Equal variances not assumed	-.56740	.64579
CD31neg54pos2	Equal variances assumed	-.87011	.28414
	Equal variances not assumed	-.84440	.25843

NPar Tests

[DataSet1] C:\Users\rxz789\Documents\SPSS\VD-MRI project\CTEVD\Database\Phase I\LSU\Reduce
d sample size with CD31 data.sav

Mann-Whitney Test

. Difference in HC vs. MS

Ranks

Study group		N	Mean Rank	Sum of Ranks
CD31pos	Adult NC	33	47.92	1581.50
	Adult MS	52	39.88	2073.50
	Total	85		
CD31pos51pos	Adult NC	33	47.03	1552.00
	Adult MS	52	40.44	2103.00
	Total	85		
CD31pos51pos_54pos	Adult NC	33	39.00	1287.00
	Adult MS	52	45.54	2368.00
	Total	85		
CD31neg54pos	Adult NC	33	40.15	1325.00
	Adult MS	52	44.81	2330.00
	Total	85		
CD31neg51pos	Adult NC	33	47.83	1578.50
	Adult MS	52	39.93	2076.50
	Total	85		
CD31neg51pos_54pos	Adult NC	33	39.74	1311.50
	Adult MS	52	45.07	2343.50
	Total	85		
CD31neg54pos2	Adult NC	33	39.70	1310.00
	Adult MS	52	45.10	2345.00
	Total	85		

Test Statistics^a

	CD31pos	CD31pos51pos	CD31pos51pos_54pos	CD31neg54pos	CD31neg51pos
Mann-Whitney U	695.500	725.000	726.000	764.000	698.500
Wilcoxon W	2073.500	2103.000	1287.000	1325.000	2076.500
Z	-1.465	-1.199	-1.190	-.848	-1.438
Asymp. Sig. (2-tailed)	.143	.230	.234	.397	.150

a. Grouping Variable: Study group

. Difference in HC vs. MS

Test Statistics^a

	CD31neg51pos_54pos	CD31neg54pos2
Mann-Whitney U	750.500	749.000
Wilcoxon W	1311.500	1310.000
Z	-.970	-.983
Asymp. Sig. (2-tailed)	.332	.326

a. Grouping Variable: Study group

. Differences in HC vs. RR

T-Test

[DataSet1] C:\Users\rxz789\Documents\SPSS\VD-MRI project\CTEVD\Database\Phase I\LSU\Reduced sample size with CD31 data.sav

Group Statistics

Type of disease course and not-disease groups		N	Mean
CD31pos	Adult non-familial NC	33	72.6627
	RR	38	69.5966
CD31pos51pos	Adult non-familial NC	33	8.4103
	RR	38	8.0503
CD31pos51pos_54pos	Adult non-familial NC	33	2.4530
	RR	38	3.5932
CD31neg54pos	Adult non-familial NC	33	10.6273
	RR	38	12.3584
CD31neg51pos	Adult non-familial NC	33	2.8655
	RR	38	2.5197
CD31neg51pos_54pos	Adult non-familial NC	33	.6173
	RR	38	.6468
CD31neg54pos2	Adult non-familial NC	33	2.1739
	RR	38	2.3697

Group Statistics

Type of disease course and not-disease groups		Std. Deviation	Std. Error Mean
CD31pos	Adult non-familial NC	12.39394	2.15751
	RR	11.58234	1.87890
CD31pos51pos	Adult non-familial NC	4.02415	.70052
	RR	4.71066	.76417
CD31pos51pos_54pos	Adult non-familial NC	2.75748	.48002
	RR	3.95635	.64181
CD31neg54pos	Adult non-familial NC	5.83520	1.01578
	RR	7.37356	1.19615
CD31neg51pos	Adult non-familial NC	1.28019	.22285
	RR	1.24147	.20139
CD31neg51pos_54pos	Adult non-familial NC	1.60902	.28009
	RR	.85054	.13798
CD31neg54pos2	Adult non-familial NC	1.13558	.19768
	RR	1.22253	.19832

. Differences in HC vs. RR

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
CD31pos	Equal variances assumed	.013	.909	1.077	69
	Equal variances not assumed			1.072	66.075
CD31pos51pos	Equal variances assumed	1.338	.251	.343	69
	Equal variances not assumed			.347	68.986
CD31pos51pos_54pos	Equal variances assumed	2.560	.114	-1.388	69
	Equal variances not assumed			-1.423	66.068
CD31neg54pos	Equal variances assumed	.564	.455	-1.085	69
	Equal variances not assumed			-1.103	68.448
CD31neg51pos	Equal variances assumed	.146	.704	1.154	69
	Equal variances not assumed			1.151	66.976
CD31neg51pos_54pos	Equal variances assumed	.132	.717	-.099	69
	Equal variances not assumed			-.095	47.020
CD31neg54pos2	Equal variances assumed	.037	.848	-.696	69
	Equal variances not assumed			-.699	68.669

. Differences in HC vs. RR

Independent Samples Test

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
CD31pos	Equal variances assumed	.285	3.06615	2.84718
	Equal variances not assumed	.288	3.06615	2.86097
CD31pos51pos	Equal variances assumed	.732	.36004	1.04830
	Equal variances not assumed	.729	.36004	1.03667
CD31pos51pos_54pos	Equal variances assumed	.170	-1.14013	.82152
	Equal variances not assumed	.160	-1.14013	.80145
CD31neg54pos	Equal variances assumed	.282	-1.73115	1.59523
	Equal variances not assumed	.274	-1.73115	1.56926
CD31neg51pos	Equal variances assumed	.253	.34572	.29971
	Equal variances not assumed	.254	.34572	.30037
CD31neg51pos_54pos	Equal variances assumed	.922	-.02957	.29991
	Equal variances not assumed	.925	-.02957	.31223
CD31neg54pos2	Equal variances assumed	.489	-.19580	.28149
	Equal variances not assumed	.487	-.19580	.28001

. Differences in HC vs. RR

Independent Samples Test

		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
CD31pos	Equal variances assumed	-2.61381	8.74611
	Equal variances not assumed	-2.64583	8.77813
CD31pos51pos	Equal variances assumed	-1.73126	2.45134
	Equal variances not assumed	-1.70806	2.42814
CD31pos51pos_54pos	Equal variances assumed	-2.77901	.49875
	Equal variances not assumed	-2.74025	.46000
CD31neg54pos	Equal variances assumed	-4.91355	1.45126
	Equal variances not assumed	-4.86219	1.39989
CD31neg51pos	Equal variances assumed	-.25219	.94363
	Equal variances not assumed	-.25383	.94526
CD31neg51pos_54pos	Equal variances assumed	-.62787	.56873
	Equal variances not assumed	-.65770	.59856
CD31neg54pos2	Equal variances assumed	-.75736	.36576
	Equal variances not assumed	-.75446	.36286

NPar Tests

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d sample size with CD31 data.sav

Mann-Whitney Test

. Differences in HC vs. RR

Ranks

Type of disease course and not-disease groups		N	Mean Rank	Sum of Ranks
CD31pos	Adult non-familial NC	33	39.27	1296.00
	RR	38	33.16	1260.00
	Total	71		
CD31pos51pos	Adult non-familial NC	33	38.70	1277.00
	RR	38	33.66	1279.00
	Total	71		
CD31pos51pos_54pos	Adult non-familial NC	33	31.97	1055.00
	RR	38	39.50	1501.00
	Total	71		
CD31neg54pos	Adult non-familial NC	33	33.05	1090.50
	RR	38	38.57	1465.50
	Total	71		
CD31neg51pos	Adult non-familial NC	33	39.47	1302.50
	RR	38	32.99	1253.50
	Total	71		
CD31neg51pos_54pos	Adult non-familial NC	33	32.62	1076.50
	RR	38	38.93	1479.50
	Total	71		
CD31neg54pos2	Adult non-familial NC	33	33.91	1119.00
	RR	38	37.82	1437.00
	Total	71		

Test Statistics^a

	CD31pos	CD31pos51pos	CD31pos51pos_54pos	CD31neg54pos	CD31neg51pos
Mann-Whitney U	519.000	538.000	494.000	529.500	512.500
Wilcoxon W	1260.000	1279.000	1055.000	1090.500	1253.500
Z	-1.245	-1.026	-1.533	-1.124	-1.320
Asymp. Sig. (2-tailed)	.213	.305	.125	.261	.187

a. Grouping Variable: Type of disease course and not-disease groups

. Differences in HC vs. RR

Test Statistics^a

	CD31neg51pos_54pos	CD31neg54pos2
Mann-Whitney U	515.500	558.000
Wilcoxon W	1076.500	1119.000
Z	-1.286	-.795
Asymp. Sig. (2-tailed)	.198	.426

a. Grouping Variable: Type of disease course and not-disease groups

. Differences in HC vs. SP

T-Test

[DataSet1] C:\Users\rxz789\Documents\SPSS\VD-MRI project\CTEVD\Database\Phase I\LSU\Reduced sample size with CD31 data.sav

Group Statistics

Type of disease course and not-disease groups		N	Mean
CD31pos	Adult non-familial NC	33	72.6627
	SP	14	66.7679
CD31pos51pos	Adult non-familial NC	33	8.4103
	SP	14	7.3586
CD31pos51pos_54pos	Adult non-familial NC	33	2.4530
	SP	14	2.2057
CD31neg54pos	Adult non-familial NC	33	10.6273
	SP	14	10.5400
CD31neg51pos	Adult non-familial NC	33	2.8655
	SP	14	2.6443
CD31neg51pos_54pos	Adult non-familial NC	33	.6173
	SP	14	.3914
CD31neg54pos2	Adult non-familial NC	33	2.1739
	SP	14	2.7307

Group Statistics

Type of disease course and not-disease groups		Std. Deviation	Std. Error Mean
CD31pos	Adult non-familial NC	12.39394	2.15751
	SP	13.96155	3.73138
CD31pos51pos	Adult non-familial NC	4.02415	.70052
	SP	3.72212	.99478
CD31pos51pos_54pos	Adult non-familial NC	2.75748	.48002
	SP	2.17489	.58126
CD31neg54pos	Adult non-familial NC	5.83520	1.01578
	SP	6.10130	1.63064
CD31neg51pos	Adult non-familial NC	1.28019	.22285
	SP	1.51876	.40591
CD31neg51pos_54pos	Adult non-familial NC	1.60902	.28009
	SP	.55815	.14917
CD31neg54pos2	Adult non-familial NC	1.13558	.19768
	SP	1.82251	.48709

. Differences in HC vs. SP

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
CD31pos	Equal variances assumed	.001	.979	1.436	45
	Equal variances not assumed			1.368	22.140
CD31pos51pos	Equal variances assumed	.002	.969	.837	45
	Equal variances not assumed			.864	26.448
CD31pos51pos_54pos	Equal variances assumed	.097	.756	.298	45
	Equal variances not assumed			.328	30.933
CD31neg54pos	Equal variances assumed	.001	.981	.046	45
	Equal variances not assumed			.045	23.603
CD31neg51pos	Equal variances assumed	.226	.637	.512	45
	Equal variances not assumed			.478	21.234
CD31neg51pos_54pos	Equal variances assumed	.553	.461	.510	45
	Equal variances not assumed			.712	44.012
CD31neg54pos2	Equal variances assumed	1.861	.179	-1.274	45
	Equal variances not assumed			-1.059	17.443

. Differences in HC vs. SP

Independent Samples Test

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
CD31pos	Equal variances assumed	.158	5.89487	4.10380
	Equal variances not assumed	.185	5.89487	4.31023
CD31pos51pos	Equal variances assumed	.407	1.05173	1.25645
	Equal variances not assumed	.395	1.05173	1.21668
CD31pos51pos_54pos	Equal variances assumed	.767	.24732	.83011
	Equal variances not assumed	.745	.24732	.75385
CD31neg54pos	Equal variances assumed	.963	.08727	1.88607
	Equal variances not assumed	.964	.08727	1.92114
CD31neg51pos	Equal variances assumed	.611	.22117	.43168
	Equal variances not assumed	.638	.22117	.46306
CD31neg51pos_54pos	Equal variances assumed	.613	.22584	.44322
	Equal variances not assumed	.480	.22584	.31734
CD31neg54pos2	Equal variances assumed	.209	-.55677	.43693
	Equal variances not assumed	.304	-.55677	.52567

. Differences in HC vs. SP

Independent Samples Test

		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
CD31pos	Equal variances assumed	-2.37061	14.16035
	Equal variances not assumed	-3.04071	14.83045
CD31pos51pos	Equal variances assumed	-1.47889	3.58235
	Equal variances not assumed	-1.44713	3.55059
CD31pos51pos_54pos	Equal variances assumed	-1.42461	1.91925
	Equal variances not assumed	-1.29030	1.78493
CD31neg54pos	Equal variances assumed	-3.71147	3.88601
	Equal variances not assumed	-3.88131	4.05585
CD31neg51pos	Equal variances assumed	-.64829	1.09062
	Equal variances not assumed	-.74117	1.18350
CD31neg51pos_54pos	Equal variances assumed	-.66685	1.11854
	Equal variances not assumed	-.41371	.86540
CD31neg54pos2	Equal variances assumed	-1.43679	.32324
	Equal variances not assumed	-1.66370	.55015

NPar Tests

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d sample size with CD31 data.sav

Mann-Whitney Test

. Differences in HC vs. SP

Ranks

Type of disease course and not-disease groups		N	Mean Rank	Sum of Ranks
CD31pos	Adult non-familial NC	33	25.65	846.50
	SP	14	20.11	281.50
	Total	47		
CD31pos51pos	Adult non-familial NC	33	25.33	836.00
	SP	14	20.86	292.00
	Total	47		
CD31pos51pos_54pos	Adult non-familial NC	33	24.03	793.00
	SP	14	23.93	335.00
	Total	47		
CD31neg54pos	Adult non-familial NC	33	24.11	795.50
	SP	14	23.75	332.50
	Total	47		
CD31neg51pos	Adult non-familial NC	33	25.36	837.00
	SP	14	20.79	291.00
	Total	47		
CD31neg51pos_54pos	Adult non-familial NC	33	24.12	796.00
	SP	14	23.71	332.00
	Total	47		
CD31neg54pos2	Adult non-familial NC	33	22.79	752.00
	SP	14	26.86	376.00
	Total	47		

Test Statistics^a

	CD31pos	CD31pos51pos	CD31pos51pos_54pos	CD31neg54pos	CD31neg51pos
Mann-Whitney U	176.500	187.000	230.000	227.500	186.000
Wilcoxon W	281.500	292.000	335.000	332.500	291.000
Z	-1.268	-1.024	-.023	-.081	-1.047
Asymp. Sig. (2-tailed)	.205	.306	.981	.935	.295

a. Grouping Variable: Type of disease course and not-disease groups

. Differences in HC vs. SP

Test Statistics^a

	CD31neg51pos_54pos	CD31neg54pos2
Mann-Whitney U	227.000	191.000
Wilcoxon W	332.000	752.000
Z	-.093	-.930
Asymp. Sig. (2-tailed)	.926	.352

a. Grouping Variable: Type of disease course and not-disease groups

. Differences in RR vs. SP

T-Test

[DataSet1] C:\Users\rxz789\Documents\SPSS\VD-MRI project\CTEVD\Database\Phase I\LSU\Reduced sample size with CD31 data.sav

Group Statistics

Type of disease course and not-...	N	Mean	Std. Deviation	Std. Error Mean	
CD31pos	RR	38	69.5966	11.58234	1.87890
	SP	14	66.7679	13.96155	3.73138
CD31pos51pos	RR	38	8.0503	4.71066	.76417
	SP	14	7.3586	3.72212	.99478
CD31pos51pos_54pos	RR	38	3.5932	3.95635	.64181
	SP	14	2.2057	2.17489	.58126
CD31neg54pos	RR	38	12.3584	7.37356	1.19615
	SP	14	10.5400	6.10130	1.63064
CD31neg51pos	RR	38	2.5197	1.24147	.20139
	SP	14	2.6443	1.51876	.40591
CD31neg51pos_54pos	RR	38	.6468	.85054	.13798
	SP	14	.3914	.55815	.14917
CD31neg54pos2	RR	38	2.3697	1.22253	.19832
	SP	14	2.7307	1.82251	.48709

. Differences in RR vs. SP

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
CD31pos	Equal variances assumed	.003	.959	.739	50
	Equal variances not assumed			.677	19.977
CD31pos51pos	Equal variances assumed	.773	.383	.494	50
	Equal variances not assumed			.551	29.286
CD31pos51pos_54pos	Equal variances assumed	2.072	.156	1.240	50
	Equal variances not assumed			1.602	42.057
CD31neg54pos	Equal variances assumed	.263	.610	.823	50
	Equal variances not assumed			.899	27.915
CD31neg51pos	Equal variances assumed	.071	.790	-.302	50
	Equal variances not assumed			-.275	19.767
CD31neg51pos_54pos	Equal variances assumed	1.174	.284	1.041	50
	Equal variances not assumed			1.257	35.603
CD31neg54pos2	Equal variances assumed	1.470	.231	-.823	50
	Equal variances not assumed			-.686	17.499

. Differences in RR vs. SP

Independent Samples Test

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
CD31pos	Equal variances assumed	.463	2.82872	3.82844
	Equal variances not assumed	.506	2.82872	4.17774
CD31pos51pos	Equal variances assumed	.623	.69169	1.39897
	Equal variances not assumed	.586	.69169	1.25441
CD31pos51pos_54pos	Equal variances assumed	.221	1.38744	1.11910
	Equal variances not assumed	.117	1.38744	.86590
CD31neg54pos	Equal variances assumed	.414	1.81842	2.20876
	Equal variances not assumed	.376	1.81842	2.02232
CD31neg51pos	Equal variances assumed	.764	-.12455	.41243
	Equal variances not assumed	.786	-.12455	.45312
CD31neg51pos_54pos	Equal variances assumed	.303	.25541	.24544
	Equal variances not assumed	.217	.25541	.20320
CD31neg54pos2	Equal variances assumed	.415	-.36098	.43877
	Equal variances not assumed	.501	-.36098	.52591

. Differences in RR vs. SP

Independent Samples Test

		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
CD31pos	Equal variances assumed	-4.86093	10.51837
	Equal variances not assumed	-5.88653	11.54398
CD31pos51pos	Equal variances assumed	-2.11823	3.50161
	Equal variances not assumed	-1.87277	3.25616
CD31pos51pos_54pos	Equal variances assumed	-.86033	3.63522
	Equal variances not assumed	-.35994	3.13483
CD31neg54pos	Equal variances assumed	-2.61801	6.25485
	Equal variances not assumed	-2.32468	5.96152
CD31neg51pos	Equal variances assumed	-.95294	.70384
	Equal variances not assumed	-1.07046	.82136
CD31neg51pos_54pos	Equal variances assumed	-.23758	.74840
	Equal variances not assumed	-.15685	.66768
CD31neg54pos2	Equal variances assumed	-1.24227	.52031
	Equal variances not assumed	-1.46815	.74620

NPar Tests

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d sample size with CD31 data.sav

Mann-Whitney Test

. Differences in RR vs. SP

Ranks

Type of disease ...		N	Mean Rank	Sum of Ranks
CD31pos	RR	38	26.92	1023.00
	SP	14	25.36	355.00
	Total	52		
CD31pos51pos	RR	38	26.83	1019.50
	SP	14	25.61	358.50
	Total	52		
CD31pos51pos_54pos	RR	38	28.08	1067.00
	SP	14	22.21	311.00
	Total	52		
CD31neg54pos	RR	38	27.71	1053.00
	SP	14	23.21	325.00
	Total	52		
CD31neg51pos	RR	38	26.29	999.00
	SP	14	27.07	379.00
	Total	52		
CD31neg51pos_54pos	RR	38	28.09	1067.50
	SP	14	22.18	310.50
	Total	52		
CD31neg54pos2	RR	38	25.97	987.00
	SP	14	27.93	391.00
	Total	52		

Test Statistics^a

	CD31pos	CD31pos51pos	CD31pos51pos_54pos	CD31neg54pos	CD31neg51pos
Mann-Whitney U	250.000	253.500	206.000	220.000	258.000
Wilcoxon W	355.000	358.500	311.000	325.000	999.000
Z	-.330	-.258	-1.238	-.949	-.165
Asymp. Sig. (2-tailed)	.741	.797	.216	.343	.869

a. Grouping Variable: Type of disease course and not-disease groups

. Differences in RR vs. SP

Test Statistics^a

	CD31neg51pos_54pos	CD31neg54pos2
Mann-Whitney U	205.500	246.000
Wilcoxon W	310.500	987.000
Z	-1.249	-.413
Asymp. Sig. (2-tailed)	.212	.680

a. Grouping Variable: Type of disease course and not-disease groups

. Differences in CCSVI vs. no-CCSVI (all subjects)

T-Test

[DataSet1] C:\Users\rxz789\Documents\SPSS\VD-MRI project\CTEVD\Database\Phase I\LSU\Reduce
d sample size with CD31 data.sav

Group Statistics

Abnormal Doppler?		N	Mean	Std. Deviation	Std. Error Mean
CD31pos	No	43	71.4502	11.61895	1.77187
	Yes	42	69.1650	13.07558	2.01761
CD31pos51pos	No	43	8.0233	3.71392	.56637
	Yes	42	8.1302	4.81540	.74303
CD31pos51pos_54pos	No	43	2.8079	3.49538	.53304
	Yes	42	3.0388	3.12833	.48271
CD31neg54pos	No	43	11.4286	6.68213	1.01902
	Yes	42	11.3440	6.57907	1.01517
CD31neg51pos	No	43	2.8619	1.29547	.19756
	Yes	42	2.4826	1.28823	.19878
CD31neg51pos_54pos	No	43	.6651	1.44043	.21966
	Yes	42	.5198	.80802	.12468
CD31neg54pos2	No	43	2.4774	1.56610	.23883
	Yes	42	2.2260	.96846	.14944

. Differences in CCSVI vs. no-CCSVI (all subjects)

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
CD31pos	Equal variances assumed	.770	.383	.852	83
	Equal variances not assumed			.851	81.377
CD31pos51pos	Equal variances assumed	1.798	.184	-.115	83
	Equal variances not assumed			-.115	77.082
CD31pos51pos_54pos	Equal variances assumed	.101	.752	-.321	83
	Equal variances not assumed			-.321	82.379
CD31neg54pos	Equal variances assumed	.098	.755	.059	83
	Equal variances not assumed			.059	82.994
CD31neg51pos	Equal variances assumed	.125	.725	1.353	83
	Equal variances not assumed			1.353	82.972
CD31neg51pos_54pos	Equal variances assumed	.497	.483	.572	83
	Equal variances not assumed			.575	66.365
CD31neg54pos2	Equal variances assumed	4.061	.047	.888	83
	Equal variances not assumed			.893	70.288

. Differences in CCSVI vs. no-CCSVI (all subjects)

Independent Samples Test

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
CD31pos	Equal variances assumed	.397	2.28523	2.68144
	Equal variances not assumed	.397	2.28523	2.68519
CD31pos51pos	Equal variances assumed	.909	-.10698	.93145
	Equal variances not assumed	.909	-.10698	.93427
CD31pos51pos_54pos	Equal variances assumed	.749	-.23090	.72007
	Equal variances not assumed	.749	-.23090	.71913
CD31neg54pos	Equal variances assumed	.953	.08456	1.43866
	Equal variances not assumed	.953	.08456	1.43839
CD31neg51pos	Equal variances assumed	.180	.37924	.28027
	Equal variances not assumed	.180	.37924	.28025
CD31neg51pos_54pos	Equal variances assumed	.569	.14535	.25415
	Equal variances not assumed	.567	.14535	.25258
CD31neg54pos2	Equal variances assumed	.377	.25149	.28323
	Equal variances not assumed	.375	.25149	.28173

. Differences in CCSVI vs. no-CCSVI (all subjects)

Independent Samples Test

		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
CD31pos	Equal variances assumed	-3.04804	7.61851
	Equal variances not assumed	-3.05709	7.62755
CD31pos51pos	Equal variances assumed	-1.95960	1.74564
	Equal variances not assumed	-1.96733	1.75336
CD31pos51pos_54pos	Equal variances assumed	-1.66310	1.20129
	Equal variances not assumed	-1.66137	1.19957
CD31neg54pos	Equal variances assumed	-2.77687	2.94599
	Equal variances not assumed	-2.77635	2.94546
CD31neg51pos	Equal variances assumed	-.17821	.93669
	Equal variances not assumed	-.17817	.93666
CD31neg51pos_54pos	Equal variances assumed	-.36015	.65086
	Equal variances not assumed	-.35889	.64960
CD31neg54pos2	Equal variances assumed	-.31184	.81482
	Equal variances not assumed	-.31036	.81334

NPar Tests

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d sample size with CD31 data.sav

Mann-Whitney Test

. Differences in CCSVI vs. no-CCSVI (all subjects)

Ranks

Abnormal Doppler?		N	Mean Rank	Sum of Ranks
CD31pos	No	43	45.05	1937.00
	Yes	42	40.90	1718.00
	Total	85		
CD31pos51pos	No	43	44.64	1919.50
	Yes	42	41.32	1735.50
	Total	85		
CD31pos51pos_54pos	No	43	39.86	1714.00
	Yes	42	46.21	1941.00
	Total	85		
CD31neg54pos	No	43	43.59	1874.50
	Yes	42	42.39	1780.50
	Total	85		
CD31neg51pos	No	43	46.79	2012.00
	Yes	42	39.12	1643.00
	Total	85		
CD31neg51pos_54pos	No	43	44.41	1909.50
	Yes	42	41.56	1745.50
	Total	85		
CD31neg54pos2	No	43	44.79	1926.00
	Yes	42	41.17	1729.00
	Total	85		

Test Statistics^a

	CD31pos	CD31pos51pos	CD31pos51pos_54pos	CD31neg54pos	CD31neg51pos
Mann-Whitney U	815.000	832.500	768.000	877.500	740.000
Wilcoxon W	1718.000	1735.500	1714.000	1780.500	1643.000
Z	-.774	-.620	-1.187	-.224	-1.433
Asymp. Sig. (2-tailed)	.439	.535	.235	.823	.152

a. Grouping Variable: Abnormal Doppler?

. Differences in CCSVI vs. no-CCSVI (all subjects)

Test Statistics^a

	CD31neg51pos_54pos	CD31neg54pos2
Mann-Whitney U	842.500	826.000
Wilcoxon W	1745.500	1729.000
Z	-.532	-.677
Asymp. Sig. (2-tailed)	.595	.499

a. Grouping Variable: Abnormal Doppler?

. Differences in CCSVI vs. no-CCSVI (HC)

T-Test

[DataSet1] C:\Users\rxz789\Documents\SPSS\VD-MRI project\CTEVD\Database\Phase I\LSU\Reduced sample size with CD31 data.sav

Group Statistics

Abnormal Doppler?		N	Mean	Std. Deviation	Std. Error Mean
CD31pos	No	25	72.5780	11.84152	2.36830
	Yes	8	72.9275	14.87785	5.26012
CD31pos51pos	No	25	8.2356	3.81873	.76375
	Yes	8	8.9562	4.85606	1.71688
CD31pos51pos_54pos	No	25	2.2176	2.83833	.56767
	Yes	8	3.1888	2.51438	.88897
CD31neg54pos	No	25	10.1720	5.66668	1.13334
	Yes	8	12.0500	6.51963	2.30504
CD31neg51pos	No	25	2.9188	1.35841	.27168
	Yes	8	2.6987	1.05994	.37474
CD31neg51pos_54pos	No	25	.7452	1.83356	.36671
	Yes	8	.2175	.25960	.09178
CD31neg54pos2	No	25	2.2596	1.21841	.24368
	Yes	8	1.9063	.83500	.29522

. Differences in CCSVI vs. no-CCSVI (HC)

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
CD31pos	Equal variances assumed	1.307	.262	-0.068	31
	Equal variances not assumed			-0.061	10.006
CD31pos51pos	Equal variances assumed	.010	.921	-0.435	31
	Equal variances not assumed			-.384	9.931
CD31pos51pos_54pos	Equal variances assumed	.077	.783	-.864	31
	Equal variances not assumed			-.921	13.231
CD31neg54pos	Equal variances assumed	1.464	.235	-.788	31
	Equal variances not assumed			-.731	10.613
CD31neg51pos	Equal variances assumed	.488	.490	.418	31
	Equal variances not assumed			.475	15.077
CD31neg51pos_54pos	Equal variances assumed	1.012	.322	.803	31
	Equal variances not assumed			1.396	26.741
CD31neg54pos2	Equal variances assumed	1.154	.291	.761	31
	Equal variances not assumed			.923	17.428

. Differences in CCSVI vs. no-CCSVI (HC)

Independent Samples Test

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
CD31pos	Equal variances assumed	.946	-.34950	5.11461
	Equal variances not assumed	.953	-.34950	5.76868
CD31pos51pos	Equal variances assumed	.666	-.72065	1.65572
	Equal variances not assumed	.709	-.72065	1.87909
CD31pos51pos_54pos	Equal variances assumed	.394	-.97115	1.12457
	Equal variances not assumed	.374	-.97115	1.05476
CD31neg54pos	Equal variances assumed	.437	-1.87800	2.38446
	Equal variances not assumed	.481	-1.87800	2.56859
CD31neg51pos	Equal variances assumed	.679	.22005	.52686
	Equal variances not assumed	.641	.22005	.46287
CD31neg51pos_54pos	Equal variances assumed	.428	.52770	.65724
	Equal variances not assumed	.174	.52770	.37802
CD31neg54pos2	Equal variances assumed	.452	.35335	.46434
	Equal variances not assumed	.369	.35335	.38280

. Differences in CCSVI vs. no-CCSVI (HC)

Independent Samples Test

		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
CD31pos	Equal variances assumed	-10.78082	10.08182
	Equal variances not assumed	-13.20192	12.50292
CD31pos51pos	Equal variances assumed	-4.09752	2.65622
	Equal variances not assumed	-4.91146	3.47016
CD31pos51pos_54pos	Equal variances assumed	-3.26472	1.32242
	Equal variances not assumed	-3.24577	1.30347
CD31neg54pos	Equal variances assumed	-6.74113	2.98513
	Equal variances not assumed	-7.55670	3.80070
CD31neg51pos	Equal variances assumed	-.85448	1.29458
	Equal variances not assumed	-.76608	1.20618
CD31neg51pos_54pos	Equal variances assumed	-.81276	1.86816
	Equal variances not assumed	-.24829	1.30369
CD31neg54pos2	Equal variances assumed	-.59368	1.30038
	Equal variances not assumed	-.45277	1.15947

NPar Tests

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d sample size with CD31 data.sav

Mann-Whitney Test

. Differences in CCSVI vs. no-CCSVI (HC)

Ranks

Abnormal Doppler?		N	Mean Rank	Sum of Ranks
CD31pos	No	25	16.64	416.00
	Yes	8	18.13	145.00
	Total	33		
CD31pos51pos	No	25	16.80	420.00
	Yes	8	17.63	141.00
	Total	33		
CD31pos51pos_54pos	No	25	15.92	398.00
	Yes	8	20.38	163.00
	Total	33		
CD31neg54pos	No	25	16.32	408.00
	Yes	8	19.13	153.00
	Total	33		
CD31neg51pos	No	25	16.54	413.50
	Yes	8	18.44	147.50
	Total	33		
CD31neg51pos_54pos	No	25	18.24	456.00
	Yes	8	13.13	105.00
	Total	33		
CD31neg54pos2	No	25	17.72	443.00
	Yes	8	14.75	118.00
	Total	33		

Test Statistics^b

	CD31pos	CD31pos51pos	CD31pos51pos_54pos	CD31neg54pos	CD31neg51pos
Mann-Whitney U	91.000	95.000	73.000	83.000	88.500
Wilcoxon W	416.000	420.000	398.000	408.000	413.500
Z	-.378	-.210	-1.134	-.714	-.483
Asymp. Sig. (2-tailed)	.705	.834	.257	.475	.629
Exact Sig. [2*(1-tailed Sig.)]	.726 ^a	.853 ^a	.272 ^a	.496 ^a	.636 ^a

a. Not corrected for ties.

b. Grouping Variable: Abnormal Doppler?

. Differences in CCSVI vs. no-CCSVI (HC)

Test Statistics^b

	CD31neg51pos_54pos	CD31neg54pos2
Mann-Whitney U	69.000	82.000
Wilcoxon W	105.000	118.000
Z	-1.304	-.756
Asymp. Sig. (2-tailed)	.192	.450
Exact Sig. [2*(1-tailed Sig.)]	.204 ^a	.470 ^a

a. Not corrected for ties.

b. Grouping Variable: Abnormal Doppler?

. Differences in CCSVI vs. no-CCSVI (MS)

T-Test

[DataSet1] C:\Users\rxz789\Documents\SPSS\VD-MRI project\CTEVD\Database\Phase I\LSU\Reduced sample size with CD31 data.sav

Group Statistics

Abnormal Doppler?		N	Mean	Std. Deviation	Std. Error Mean
CD31pos	No	18	69.8839	11.44994	2.69878
	Yes	34	68.2797	12.69747	2.17760
CD31pos51pos	No	18	7.7283	3.65123	.86060
	Yes	34	7.9359	4.85829	.83319
CD31pos51pos_54pos	No	18	3.6278	4.19372	.98847
	Yes	34	3.0035	3.28802	.56389
CD31neg54pos	No	18	13.1739	7.70929	1.81710
	Yes	34	11.1779	6.67920	1.14547
CD31neg51pos	No	18	2.7828	1.23683	.29152
	Yes	34	2.4318	1.34519	.23070
CD31neg51pos_54pos	No	18	.5539	.59774	.14089
	Yes	34	.5909	.87722	.15044
CD31neg54pos2	No	18	2.7800	1.94860	.45929
	Yes	34	2.3012	.99337	.17036

. Differences in CCSVI vs. no-CCSVI (MS)

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
CD31pos	Equal variances assumed	.053	.819	.448	50
	Equal variances not assumed			.463	38.036
CD31pos51pos	Equal variances assumed	2.181	.146	-.159	50
	Equal variances not assumed			-.173	43.924
CD31pos51pos_54pos	Equal variances assumed	1.199	.279	.591	50
	Equal variances not assumed			.549	28.320
CD31neg54pos	Equal variances assumed	.373	.544	.972	50
	Equal variances not assumed			.929	30.698
CD31neg51pos	Equal variances assumed	.098	.755	.920	50
	Equal variances not assumed			.944	37.403
CD31neg51pos_54pos	Equal variances assumed	.179	.674	-.160	50
	Equal variances not assumed			-.179	46.635
CD31neg54pos2	Equal variances assumed	3.365	.073	1.179	50
	Equal variances not assumed			.977	21.787

. Differences in CCSVI vs. no-CCSVI (MS)

Independent Samples Test

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
CD31pos	Equal variances assumed	.656	1.60418	3.58171
	Equal variances not assumed	.646	1.60418	3.46776
CD31pos51pos	Equal variances assumed	.874	-.20755	1.30719
	Equal variances not assumed	.863	-.20755	1.19785
CD31pos51pos_54pos	Equal variances assumed	.557	.62425	1.05563
	Equal variances not assumed	.588	.62425	1.13800
CD31neg54pos	Equal variances assumed	.336	1.99595	2.05395
	Equal variances not assumed	.360	1.99595	2.14801
CD31neg51pos	Equal variances assumed	.362	.35101	.38167
	Equal variances not assumed	.351	.35101	.37176
CD31neg51pos_54pos	Equal variances assumed	.874	-.03699	.23125
	Equal variances not assumed	.858	-.03699	.20611
CD31neg54pos2	Equal variances assumed	.244	.47882	.40624
	Equal variances not assumed	.339	.47882	.48987

. Differences in CCSVI vs. no-CCSVI (MS)

Independent Samples Test

		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
CD31pos	Equal variances assumed	-5.58990	8.79826
	Equal variances not assumed	-5.41570	8.62407
CD31pos51pos	Equal variances assumed	-2.83312	2.41802
	Equal variances not assumed	-2.62177	2.20667
CD31pos51pos_54pos	Equal variances assumed	-1.49604	2.74454
	Equal variances not assumed	-1.70565	2.95415
CD31neg54pos	Equal variances assumed	-2.12953	6.12143
	Equal variances not assumed	-2.38669	6.37859
CD31neg51pos	Equal variances assumed	-.41559	1.11761
	Equal variances not assumed	-.40198	1.10400
CD31neg51pos_54pos	Equal variances assumed	-.50147	.42748
	Equal variances not assumed	-.45172	.37774
CD31neg54pos2	Equal variances assumed	-.33713	1.29478
	Equal variances not assumed	-.53768	1.49532

NPar Tests

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d sample size with CD31 data.sav

Mann-Whitney Test

. Differences in CCSVI vs. no-CCSVI (MS)

Ranks

Abnormal Doppler?		N	Mean Rank	Sum of Ranks
CD31pos	No	18	27.89	502.00
	Yes	34	25.76	876.00
	Total	52		
CD31pos51pos	No	18	27.58	496.50
	Yes	34	25.93	881.50
	Total	52		
CD31pos51pos_54pos	No	18	26.25	472.50
	Yes	34	26.63	905.50
	Total	52		
CD31neg54pos	No	18	30.56	550.00
	Yes	34	24.35	828.00
	Total	52		
CD31neg51pos	No	18	29.97	539.50
	Yes	34	24.66	838.50
	Total	52		
CD31neg51pos_54pos	No	18	27.28	491.00
	Yes	34	26.09	887.00
	Total	52		
CD31neg54pos2	No	18	29.25	526.50
	Yes	34	25.04	851.50
	Total	52		

Test Statistics^a

	CD31pos	CD31pos51pos	CD31pos51pos_54pos	CD31neg54pos	CD31neg51pos
Mann-Whitney U	281.000	286.500	301.500	233.000	243.500
Wilcoxon W	876.000	881.500	472.500	828.000	838.500
Z	-.481	-.375	-.087	-1.404	-1.202
Asymp. Sig. (2-tailed)	.631	.708	.931	.160	.229

a. Grouping Variable: Abnormal Doppler?

. Differences in CCSVI vs. no-CCSVI (MS)

Test Statistics^a

	CD31neg51pos_54pos	CD31neg54pos2
Mann-Whitney U	292.000	256.500
Wilcoxon W	887.000	851.500
Z	-.269	-.952
Asymp. Sig. (2-tailed)	.788	.341

a. Grouping Variable: Abnormal Doppler?

. Differences in CCSVI vs. no-CCSVI (RRMS)

T-Test

[DataSet1] C:\Users\rxz789\Documents\SPSS\VD-MRI project\CTEVD\Database\Phase I\LSU\Reduced sample size with CD31 data.sav

Group Statistics

Abnormal Doppler?		N	Mean	Std. Deviation	Std. Error Mean
CD31pos	No	15	69.0640	12.03642	3.10779
	Yes	23	69.9439	11.53707	2.40565
CD31pos51pos	No	15	7.7253	3.92207	1.01267
	Yes	23	8.2622	5.23566	1.09171
CD31pos51pos_54pos	No	15	3.9580	4.48374	1.15770
	Yes	23	3.3552	3.65810	.76277
CD31neg54pos	No	15	14.0260	7.91410	2.04341
	Yes	23	11.2709	6.96058	1.45138
CD31neg51pos	No	15	2.7773	1.32826	.34296
	Yes	23	2.3517	1.18094	.24624
CD31neg51pos_54pos	No	15	.4960	.46099	.11903
	Yes	23	.7452	1.02752	.21425
CD31neg54pos2	No	15	2.5680	1.57519	.40671
	Yes	23	2.2404	.94359	.19675

. Differences in CCSVI vs. no-CCSVI (RRMS)

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
CD31pos	Equal variances assumed	.130	.720	-.226	36
	Equal variances not assumed			-.224	29.145
CD31pos51pos	Equal variances assumed	1.775	.191	-.339	36
	Equal variances not assumed			-.361	35.198
CD31pos51pos_54pos	Equal variances assumed	1.213	.278	.454	36
	Equal variances not assumed			.435	25.710
CD31neg54pos	Equal variances assumed	.406	.528	1.130	36
	Equal variances not assumed			1.099	27.272
CD31neg51pos	Equal variances assumed	1.404	.244	1.034	36
	Equal variances not assumed			1.008	27.504
CD31neg51pos_54pos	Equal variances assumed	2.304	.138	-.880	36
	Equal variances not assumed			-1.017	32.770
CD31neg54pos2	Equal variances assumed	1.555	.220	.803	36
	Equal variances not assumed			.725	20.602

. Differences in CCSVI vs. no-CCSVI (RRMS)

Independent Samples Test

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
CD31pos	Equal variances assumed	.823	-.87991	3.89422
	Equal variances not assumed	.824	-.87991	3.93008
CD31pos51pos	Equal variances assumed	.736	-.53684	1.58241
	Equal variances not assumed	.721	-.53684	1.48907
CD31pos51pos_54pos	Equal variances assumed	.652	.60278	1.32735
	Equal variances not assumed	.667	.60278	1.38639
CD31neg54pos	Equal variances assumed	.266	2.75513	2.43803
	Equal variances not assumed	.281	2.75513	2.50640
CD31neg51pos	Equal variances assumed	.308	.42559	.41164
	Equal variances not assumed	.322	.42559	.42220
CD31neg51pos_54pos	Equal variances assumed	.385	-.24922	.28314
	Equal variances not assumed	.317	-.24922	.24510
CD31neg54pos2	Equal variances assumed	.427	.32757	.40769
	Equal variances not assumed	.477	.32757	.45180

. Differences in CCSVI vs. no-CCSVI (RRMS)

Independent Samples Test

		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
CD31pos	Equal variances assumed	-8.77776	7.01793
	Equal variances not assumed	-8.91609	7.15626
CD31pos51pos	Equal variances assumed	-3.74612	2.67244
	Equal variances not assumed	-3.55921	2.48553
CD31pos51pos_54pos	Equal variances assumed	-2.08921	3.29478
	Equal variances not assumed	-2.24855	3.45411
CD31neg54pos	Equal variances assumed	-2.18943	7.69969
	Equal variances not assumed	-2.38518	7.89544
CD31neg51pos	Equal variances assumed	-.40924	1.26043
	Equal variances not assumed	-.43995	1.29114
CD31neg51pos_54pos	Equal variances assumed	-.82346	.32502
	Equal variances not assumed	-.74800	.24957
CD31neg54pos2	Equal variances assumed	-.49927	1.15440
	Equal variances not assumed	-.61312	1.26825

NPar Tests

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d sample size with CD31 data.sav

Mann-Whitney Test

. Differences in CCSVI vs. no-CCSVI (RRMS)

Ranks

Abnormal Doppler?		N	Mean Rank	Sum of Ranks
CD31pos	No	15	19.33	290.00
	Yes	23	19.61	451.00
	Total	38		
CD31pos51pos	No	15	19.53	293.00
	Yes	23	19.48	448.00
	Total	38		
CD31pos51pos_54pos	No	15	19.17	287.50
	Yes	23	19.72	453.50
	Total	38		
CD31neg54pos	No	15	23.67	355.00
	Yes	23	16.78	386.00
	Total	38		
CD31neg51pos	No	15	21.60	324.00
	Yes	23	18.13	417.00
	Total	38		
CD31neg51pos_54pos	No	15	19.10	286.50
	Yes	23	19.76	454.50
	Total	38		
CD31neg54pos2	No	15	21.60	324.00
	Yes	23	18.13	417.00
	Total	38		

Test Statistics^b

	CD31pos	CD31pos51pos	CD31pos51pos_54pos	CD31neg54pos	CD31neg51pos
Mann-Whitney U	170.000	172.000	167.500	110.000	141.000
Wilcoxon W	290.000	448.000	287.500	386.000	417.000
Z	-.075	-.015	-.149	-1.867	-.941
Asymp. Sig. (2-tailed)	.940	.988	.881	.062	.347
Exact Sig. [2*(1-tailed Sig.)]	.953 ^a	1.000 ^a	.883 ^a	.064 ^a	.359 ^a

a. Not corrected for ties.

b. Grouping Variable: Abnormal Doppler?

. Differences in CCSVI vs. no-CCSVI (RRMS)

Test Statistics^b

	CD31neg51pos_54pos	CD31neg54pos2
Mann-Whitney U	166.500	141.000
Wilcoxon W	286.500	417.000
Z	-.179	-.941
Asymp. Sig. (2-tailed)	.858	.347
Exact Sig. [2*(1-tailed Sig.)]	.860 ^a	.359 ^a

a. Not corrected for ties.

b. Grouping Variable: Abnormal Doppler?

. Differences in CCSVI vs. no-CCSVI (SPMS)

T-Test

[DataSet1] C:\Users\rxz789\Documents\SPSS\VD-MRI project\CTEVD\Database\Phase I\LSU\Reduced sample size with CD31 data.sav

Group Statistics

Abnormal Doppler?		N	Mean	Std. Deviation	Std. Error Mean
CD31pos	No	15	69.0640	12.03642	3.10779
	Yes	23	69.9439	11.53707	2.40565
CD31pos51pos	No	15	7.7253	3.92207	1.01267
	Yes	23	8.2622	5.23566	1.09171
CD31pos51pos_54pos	No	15	3.9580	4.48374	1.15770
	Yes	23	3.3552	3.65810	.76277
CD31neg54pos	No	15	14.0260	7.91410	2.04341
	Yes	23	11.2709	6.96058	1.45138
CD31neg51pos	No	15	2.7773	1.32826	.34296
	Yes	23	2.3517	1.18094	.24624
CD31neg51pos_54pos	No	15	.4960	.46099	.11903
	Yes	23	.7452	1.02752	.21425
CD31neg54pos2	No	15	2.5680	1.57519	.40671
	Yes	23	2.2404	.94359	.19675

. Differences in CCSVI vs. no-CCSVI (SPMS)

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
CD31pos	Equal variances assumed	.130	.720	-0.226	36
	Equal variances not assumed			-0.224	29.145
CD31pos51pos	Equal variances assumed	1.775	.191	-0.339	36
	Equal variances not assumed			-0.361	35.198
CD31pos51pos_54pos	Equal variances assumed	1.213	.278	.454	36
	Equal variances not assumed			.435	25.710
CD31neg54pos	Equal variances assumed	.406	.528	1.130	36
	Equal variances not assumed			1.099	27.272
CD31neg51pos	Equal variances assumed	1.404	.244	1.034	36
	Equal variances not assumed			1.008	27.504
CD31neg51pos_54pos	Equal variances assumed	2.304	.138	-0.880	36
	Equal variances not assumed			-1.017	32.770
CD31neg54pos2	Equal variances assumed	1.555	.220	.803	36
	Equal variances not assumed			.725	20.602

. Differences in CCSVI vs. no-CCSVI (SPMS)

Independent Samples Test

		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
CD31pos	Equal variances assumed	.823	-.87991	3.89422
	Equal variances not assumed	.824	-.87991	3.93008
CD31pos51pos	Equal variances assumed	.736	-.53684	1.58241
	Equal variances not assumed	.721	-.53684	1.48907
CD31pos51pos_54pos	Equal variances assumed	.652	.60278	1.32735
	Equal variances not assumed	.667	.60278	1.38639
CD31neg54pos	Equal variances assumed	.266	2.75513	2.43803
	Equal variances not assumed	.281	2.75513	2.50640
CD31neg51pos	Equal variances assumed	.308	.42559	.41164
	Equal variances not assumed	.322	.42559	.42220
CD31neg51pos_54pos	Equal variances assumed	.385	-.24922	.28314
	Equal variances not assumed	.317	-.24922	.24510
CD31neg54pos2	Equal variances assumed	.427	.32757	.40769
	Equal variances not assumed	.477	.32757	.45180

. Differences in CCSVI vs. no-CCSVI (SPMS)

Independent Samples Test

		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
CD31pos	Equal variances assumed	-8.77776	7.01793
	Equal variances not assumed	-8.91609	7.15626
CD31pos51pos	Equal variances assumed	-3.74612	2.67244
	Equal variances not assumed	-3.55921	2.48553
CD31pos51pos_54pos	Equal variances assumed	-2.08921	3.29478
	Equal variances not assumed	-2.24855	3.45411
CD31neg54pos	Equal variances assumed	-2.18943	7.69969
	Equal variances not assumed	-2.38518	7.89544
CD31neg51pos	Equal variances assumed	-.40924	1.26043
	Equal variances not assumed	-.43995	1.29114
CD31neg51pos_54pos	Equal variances assumed	-.82346	.32502
	Equal variances not assumed	-.74800	.24957
CD31neg54pos2	Equal variances assumed	-.49927	1.15440
	Equal variances not assumed	-.61312	1.26825

NPar Tests

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d sample size with CD31 data.sav

Mann-Whitney Test

. Differences in CCSVI vs. no-CCSVI (SPMS)

Ranks

Abnormal Doppler?		N	Mean Rank	Sum of Ranks
CD31pos	No	15	19.33	290.00
	Yes	23	19.61	451.00
	Total	38		
CD31pos51pos	No	15	19.53	293.00
	Yes	23	19.48	448.00
	Total	38		
CD31pos51pos_54pos	No	15	19.17	287.50
	Yes	23	19.72	453.50
	Total	38		
CD31neg54pos	No	15	23.67	355.00
	Yes	23	16.78	386.00
	Total	38		
CD31neg51pos	No	15	21.60	324.00
	Yes	23	18.13	417.00
	Total	38		
CD31neg51pos_54pos	No	15	19.10	286.50
	Yes	23	19.76	454.50
	Total	38		
CD31neg54pos2	No	15	21.60	324.00
	Yes	23	18.13	417.00
	Total	38		

Test Statistics^b

	CD31pos	CD31pos51pos	CD31pos51pos_54pos	CD31neg54pos	CD31neg51pos
Mann-Whitney U	170.000	172.000	167.500	110.000	141.000
Wilcoxon W	290.000	448.000	287.500	386.000	417.000
Z	-.075	-.015	-.149	-1.867	-.941
Asymp. Sig. (2-tailed)	.940	.988	.881	.062	.347
Exact Sig. [2*(1-tailed Sig.)]	.953 ^a	1.000 ^a	.883 ^a	.064 ^a	.359 ^a

a. Not corrected for ties.

b. Grouping Variable: Abnormal Doppler?

. Differences in CCSVI vs. no-CCSVI (SPMS)

Test Statistics^b

	CD31neg51pos_54pos	CD31neg54pos2
Mann-Whitney U	166.500	141.000
Wilcoxon W	286.500	417.000
Z	-.179	-.941
Asymp. Sig. (2-tailed)	.858	.347
Exact Sig. [2*(1-tailed Sig.)]	.860 ^a	.359 ^a

a. Not corrected for ties.

b. Grouping Variable: Abnormal Doppler?

. Correlation between VHISS (CCSVI severity) in all subjects

Nonparametric Correlations

[DataSet1] C:\Users\rxz789\Documents\SPSS\VD-MRI project\CTEVD\Database\Phase I\LSU\Reduced sample size with CD31 data.sav

Correlations

			Venous haemodynamic insufficiency severity score	CD31pos	CD31pos51pos
Spearman's rho	Venous haemodynamic insufficiency severity score	Correlation Coefficient	1.000	-.056	-.100
		Sig. (2-tailed)	.	.613	.361
		N	85	85	85
	CD31pos	Correlation Coefficient	-.056	1.000	-.013
		Sig. (2-tailed)	.613	.	.907
		N	85	85	85
	CD31pos51pos	Correlation Coefficient	-.100	-.013	1.000
		Sig. (2-tailed)	.361	.907	.
		N	85	85	85
	CD31pos51pos_54pos	Correlation Coefficient	.054	-.132	.490**
	Sig. (2-tailed)	.621	.228	.000	
	N	85	85	85	
CD31neg54pos	Correlation Coefficient	-.055	-.018	-.126	
	Sig. (2-tailed)	.620	.869	.251	
	N	85	85	85	
CD31neg51pos	Correlation Coefficient	-.146	.060	.508**	
	Sig. (2-tailed)	.183	.584	.000	
	N	85	85	85	
CD31neg51pos_54pos	Correlation Coefficient	-.004	-.092	.299**	
	Sig. (2-tailed)	.970	.403	.005	
	N	85	85	85	
CD31neg54pos2	Correlation Coefficient	-.018	.010	.071	
	Sig. (2-tailed)	.873	.930	.516	
	N	85	85	85	

** . Correlation is significant at the 0.01 level (2-tailed).

. Correlation between VHISS (CCSVI severity) in all subjects

Correlations

			CD31pos51pos_54pos	CD31neg54pos	CD31neg51pos
Spearman's rho	Venous haemodynamic insufficiency severity score	Correlation Coefficient	.054	-.055	-.146
		Sig. (2-tailed)	.621	.620	.183
		N	85	85	85
CD31pos		Correlation Coefficient	-.132	-.018	.060
		Sig. (2-tailed)	.228	.869	.584
		N	85	85	85
CD31pos51pos		Correlation Coefficient	.490**	-.126	.508**
		Sig. (2-tailed)	.000	.251	.000
		N	85	85	85
CD31pos51pos_54pos		Correlation Coefficient	1.000	.559**	.302**
		Sig. (2-tailed)	.	.000	.005
		N	85	85	85
CD31neg54pos		Correlation Coefficient	.559**	1.000	.062
		Sig. (2-tailed)	.000	.	.572
		N	85	85	85
CD31neg51pos		Correlation Coefficient	.302**	.062	1.000
		Sig. (2-tailed)	.005	.572	.
		N	85	85	85
CD31neg51pos_54pos		Correlation Coefficient	.489**	.177	.394**
		Sig. (2-tailed)	.000	.104	.000
		N	85	85	85
CD31neg54pos2		Correlation Coefficient	.132	.212	.325**
		Sig. (2-tailed)	.230	.051	.002
		N	85	85	85

** . Correlation is significant at the 0.01 level (2-tailed).

. Correlation between VHISS (CCSVI severity) in all subjects

Correlations

			CD31neg51pos_54pos	CD31neg54pos2
Spearman's rho	Venous haemodynamic insufficiency severity score	Correlation Coefficient	-.004	-.018
		Sig. (2-tailed)	.970	.873
		N	85	85
	CD31pos	Correlation Coefficient	-.092	.010
		Sig. (2-tailed)	.403	.930
		N	85	85
	CD31pos51pos	Correlation Coefficient	.299**	.071
		Sig. (2-tailed)	.005	.516
		N	85	85
	CD31pos51pos_54pos	Correlation Coefficient	.489**	.132
		Sig. (2-tailed)	.000	.230
		N	85	85
CD31neg54pos	Correlation Coefficient	.177	.212	
	Sig. (2-tailed)	.104	.051	
	N	85	85	
CD31neg51pos	Correlation Coefficient	.394**	.325**	
	Sig. (2-tailed)	.000	.002	
	N	85	85	
CD31neg51pos_54pos	Correlation Coefficient	1.000	.482**	
	Sig. (2-tailed)	.	.000	
	N	85	85	
CD31neg54pos2	Correlation Coefficient	.482**	1.000	
	Sig. (2-tailed)	.000	.	
	N	85	85	

** . Correlation is significant at the 0.01 level (2-tailed).

. Correlation between VHISS (CCSVI severity) in HC

Nonparametric Correlations

[DataSet1] C:\Users\rxz789\Documents\SPSS\VD-MRI project\CTEVD\Database\Phase I\LSU\Reduced sample size with CD31 data.sav

Correlations

			Venous haemodynamic insufficiency severity score	CD31pos	CD31pos51pos
Spearman's rho	Venous haemodynamic insufficiency severity score	Correlation Coefficient	1.000	-.079	-.114
		Sig. (2-tailed)	.	.662	.529
		N	33	33	33
	CD31pos	Correlation Coefficient	-.079	1.000	-.019
		Sig. (2-tailed)	.662	.	.916
		N	33	33	33
	CD31pos51pos	Correlation Coefficient	-.114	-.019	1.000
		Sig. (2-tailed)	.529	.916	.
		N	33	33	33
	CD31pos51pos_54pos	Correlation Coefficient	.094	-.243	.353*
	Sig. (2-tailed)	.602	.173	.044	
	N	33	33	33	
CD31neg54pos	Correlation Coefficient	.099	-.220	-.317	
	Sig. (2-tailed)	.585	.219	.072	
	N	33	33	33	
CD31neg51pos	Correlation Coefficient	.082	-.046	.394*	
	Sig. (2-tailed)	.649	.798	.023	
	N	33	33	33	
CD31neg51pos_54pos	Correlation Coefficient	-.080	-.091	.268	
	Sig. (2-tailed)	.657	.613	.132	
	N	33	33	33	
CD31neg54pos2	Correlation Coefficient	-.072	-.162	.119	
	Sig. (2-tailed)	.692	.366	.510	
	N	33	33	33	

*. Correlation is significant at the 0.05 level (2-tailed).

. Correlation between VHISS (CCSVI severity) in HC

Correlations

			CD31pos51pos_54pos	CD31neg54pos	CD31neg51pos
Spearman's rho	Venous haemodynamic insufficiency severity score	Correlation Coefficient	.094	.099	.082
		Sig. (2-tailed)	.602	.585	.649
		N	33	33	33
CD31pos		Correlation Coefficient	-.243	-.220	-.046
		Sig. (2-tailed)	.173	.219	.798
		N	33	33	33
CD31pos51pos		Correlation Coefficient	.353*	-.317	.394*
		Sig. (2-tailed)	.044	.072	.023
		N	33	33	33
CD31pos51pos_54pos		Correlation Coefficient	1.000	.563**	.181
		Sig. (2-tailed)	.	.001	.313
		N	33	33	33
CD31neg54pos		Correlation Coefficient	.563**	1.000	-.056
		Sig. (2-tailed)	.001	.	.756
		N	33	33	33
CD31neg51pos		Correlation Coefficient	.181	-.056	1.000
		Sig. (2-tailed)	.313	.756	.
		N	33	33	33
CD31neg51pos_54pos		Correlation Coefficient	.294	-.097	.320
		Sig. (2-tailed)	.097	.591	.069
		N	33	33	33
CD31neg54pos2		Correlation Coefficient	.007	-.094	.368*
		Sig. (2-tailed)	.971	.604	.035
		N	33	33	33

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

. Correlation between VHISS (CCSVI severity) in HC

Correlations

			CD31neg51pos_54pos	CD31neg54pos2
Spearman's rho	Venous haemodynamic insufficiency severity score	Correlation Coefficient	-.080	-.072
		Sig. (2-tailed)	.657	.692
		N	33	33
	CD31pos	Correlation Coefficient	-.091	-.162
		Sig. (2-tailed)	.613	.366
		N	33	33
	CD31pos51pos	Correlation Coefficient	.268	.119
		Sig. (2-tailed)	.132	.510
		N	33	33
	CD31pos51pos_54pos	Correlation Coefficient	.294	.007
Sig. (2-tailed)		.097	.971	
N		33	33	
CD31neg54pos	Correlation Coefficient	-.097	-.094	
	Sig. (2-tailed)	.591	.604	
	N	33	33	
CD31neg51pos	Correlation Coefficient	.320	.368*	
	Sig. (2-tailed)	.069	.035	
	N	33	33	
CD31neg51pos_54pos	Correlation Coefficient	1.000	.536**	
	Sig. (2-tailed)	.	.001	
	N	33	33	
CD31neg54pos2	Correlation Coefficient	.536**	1.000	
	Sig. (2-tailed)	.001	.	
	N	33	33	

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

. Correlation between VHISS (CCSVI severity) in MS

Nonparametric Correlations

[DataSet1] C:\Users\rxz789\Documents\SPSS\VD-MRI project\CTEVD\Database\Phase I\LSU\Reduced sample size with CD31 data.sav

Correlations

		Venous haemodynamic insufficiency severity score	CD31pos	CD31pos51pos
Spearman's rho	Venous haemodynamic insufficiency severity score	Correlation Coefficient	1.000	.098
		Sig. (2-tailed)	.	.487
		N	52	52
CD31pos	CD31pos	Correlation Coefficient	.098	1.000
		Sig. (2-tailed)	.487	.763
		N	52	52
CD31pos51pos	CD31pos51pos	Correlation Coefficient	-.065	-.043
		Sig. (2-tailed)	.645	.763
		N	52	52
CD31pos51pos_54pos	CD31pos51pos_54pos	Correlation Coefficient	-.063	-.016
		Sig. (2-tailed)	.655	.910
		N	52	52
CD31neg54pos	CD31neg54pos	Correlation Coefficient	-.192	.143
		Sig. (2-tailed)	.173	.313
		N	52	52
CD31neg51pos	CD31neg51pos	Correlation Coefficient	-.158	.113
		Sig. (2-tailed)	.263	.426
		N	52	52
CD31neg51pos_54pos	CD31neg51pos_54pos	Correlation Coefficient	-.069	-.044
		Sig. (2-tailed)	.625	.758
		N	52	52
CD31neg54pos2	CD31neg54pos2	Correlation Coefficient	-.116	.164
		Sig. (2-tailed)	.411	.246
		N	52	52

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between VHISS (CCSVI severity) in MS

Correlations

			CD31pos51pos_54pos	CD31neg54pos	CD31neg51pos
Spearman's rho	Venous haemodynamic insufficiency severity score	Correlation Coefficient	-.063	-.192	-.158
		Sig. (2-tailed)	.655	.173	.263
		N	52	52	52
CD31pos		Correlation Coefficient	-.016	.143	.113
		Sig. (2-tailed)	.910	.313	.426
		N	52	52	52
CD31pos51pos		Correlation Coefficient	.604**	.002	.505**
		Sig. (2-tailed)	.000	.990	.000
		N	52	52	52
CD31pos51pos_54pos		Correlation Coefficient	1.000	.531**	.458**
		Sig. (2-tailed)	.	.000	.001
		N	52	52	52
CD31neg54pos		Correlation Coefficient	.531**	1.000	.215
		Sig. (2-tailed)	.000	.	.125
		N	52	52	52
CD31neg51pos		Correlation Coefficient	.458**	.215	1.000
		Sig. (2-tailed)	.001	.125	.
		N	52	52	52
CD31neg51pos_54pos		Correlation Coefficient	.632**	.358**	.487**
		Sig. (2-tailed)	.000	.009	.000
		N	52	52	52
CD31neg54pos2		Correlation Coefficient	.237	.392**	.381**
		Sig. (2-tailed)	.091	.004	.005
		N	52	52	52

** . Correlation is significant at the 0.01 level (2-tailed).

. Correlation between VHISS (CCSVI severity) in MS

Correlations

			CD31neg51pos_54pos	CD31neg54pos2
Spearman's rho	Venous haemodynamic insufficiency severity score	Correlation Coefficient	-.069	-.116
		Sig. (2-tailed)	.625	.411
		N	52	52
	CD31pos	Correlation Coefficient	-.044	.164
		Sig. (2-tailed)	.758	.246
		N	52	52
	CD31pos51pos	Correlation Coefficient	.349*	.070
		Sig. (2-tailed)	.011	.624
		N	52	52
CD31pos51pos_54pos	Correlation Coefficient	.632**	.237	
	Sig. (2-tailed)	.000	.091	
	N	52	52	
CD31neg54pos	Correlation Coefficient	.358**	.392**	
	Sig. (2-tailed)	.009	.004	
	N	52	52	
CD31neg51pos	Correlation Coefficient	.487**	.381**	
	Sig. (2-tailed)	.000	.005	
	N	52	52	
CD31neg51pos_54pos	Correlation Coefficient	1.000	.448**	
	Sig. (2-tailed)	.	.001	
	N	52	52	
CD31neg54pos2	Correlation Coefficient	.448**	1.000	
	Sig. (2-tailed)	.001	.	
	N	52	52	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between VHISS (CCSVI severity) in RRMS

Nonparametric Correlations

[DataSet1] C:\Users\rxz789\Documents\SPSS\VD-MRI project\CTEVD\Database\Phase I\LSU\Reduced sample size with CD31 data.sav

Correlations

			Venous haemodynamic insufficiency severity score	CD31pos	CD31pos51pos
Spearman's rho	Venous haemodynamic insufficiency severity score	Correlation Coefficient	1.000	.131	-.003
		Sig. (2-tailed)	.	.432	.987
		N	38	38	38
	CD31pos	Correlation Coefficient	.131	1.000	-.020
		Sig. (2-tailed)	.432	.	.906
		N	38	38	38
	CD31pos51pos	Correlation Coefficient	-.003	-.020	1.000
		Sig. (2-tailed)	.987	.906	.
		N	38	38	38
	CD31pos51pos_54pos	Correlation Coefficient	-.074	.021	.648**
Sig. (2-tailed)		.659	.900	.000	
N		38	38	38	
CD31neg54pos	Correlation Coefficient	-.312	.139	.055	
	Sig. (2-tailed)	.057	.406	.744	
	N	38	38	38	
CD31neg51pos	Correlation Coefficient	-.092	.144	.457**	
	Sig. (2-tailed)	.583	.387	.004	
	N	38	38	38	
CD31neg51pos_54pos	Correlation Coefficient	.028	.049	.341*	
	Sig. (2-tailed)	.868	.770	.036	
	N	38	38	38	
CD31neg54pos2	Correlation Coefficient	-.097	.277	.012	
	Sig. (2-tailed)	.562	.093	.941	
	N	38	38	38	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between VHISS (CCSVI severity) in RRMS

Correlations

			CD31pos51pos_54pos	CD31neg54pos	CD31neg51pos
Spearman's rho	Venous haemodynamic insufficiency severity score	Correlation Coefficient	-.074	-.312	-.092
		Sig. (2-tailed)	.659	.057	.583
		N	38	38	38
CD31pos		Correlation Coefficient	.021	.139	.144
		Sig. (2-tailed)	.900	.406	.387
		N	38	38	38
CD31pos51pos		Correlation Coefficient	.648**	.055	.457**
		Sig. (2-tailed)	.000	.744	.004
		N	38	38	38
CD31pos51pos_54pos		Correlation Coefficient	1.000	.482**	.516**
		Sig. (2-tailed)	.	.002	.001
		N	38	38	38
CD31neg54pos		Correlation Coefficient	.482**	1.000	.250
		Sig. (2-tailed)	.002	.	.130
		N	38	38	38
CD31neg51pos		Correlation Coefficient	.516**	.250	1.000
		Sig. (2-tailed)	.001	.130	.
		N	38	38	38
CD31neg51pos_54pos		Correlation Coefficient	.687**	.359*	.522**
		Sig. (2-tailed)	.000	.027	.001
		N	38	38	38
CD31neg54pos2		Correlation Coefficient	.129	.316	.350*
		Sig. (2-tailed)	.440	.053	.031
		N	38	38	38

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between VHISS (CCSVI severity) in RRMS

Correlations

			CD31neg51pos_54pos	CD31neg54pos2
Spearman's rho	Venous haemodynamic insufficiency severity score	Correlation Coefficient	.028	-.097
		Sig. (2-tailed)	.868	.562
		N	38	38
	CD31pos	Correlation Coefficient	.049	.277
		Sig. (2-tailed)	.770	.093
		N	38	38
	CD31pos51pos	Correlation Coefficient	.341*	.012
		Sig. (2-tailed)	.036	.941
		N	38	38
	CD31pos51pos_54pos	Correlation Coefficient	.687**	.129
Sig. (2-tailed)		.000	.440	
N		38	38	
CD31neg54pos	Correlation Coefficient	.359*	.316	
	Sig. (2-tailed)	.027	.053	
	N	38	38	
CD31neg51pos	Correlation Coefficient	.522**	.350*	
	Sig. (2-tailed)	.001	.031	
	N	38	38	
CD31neg51pos_54pos	Correlation Coefficient	1.000	.332*	
	Sig. (2-tailed)	.	.042	
	N	38	38	
CD31neg54pos2	Correlation Coefficient	.332*	1.000	
	Sig. (2-tailed)	.042	.	
	N	38	38	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between VHISS (CCSVI severity) in SPMS

Nonparametric Correlations

[DataSet1] C:\Users\rxz789\Documents\SPSS\VD-MRI project\CTEVD\Database\Phase I\LSU\Reduced sample size with CD31 data.sav

Correlations

			Venous haemodynamic insufficiency severity score	CD31pos	CD31pos51pos
Spearman's rho	Venous haemodynamic insufficiency severity score	Correlation Coefficient	1.000	.095	-.176
		Sig. (2-tailed)	.	.747	.548
		N	14	14	14
	CD31pos	Correlation Coefficient	.095	1.000	-.200
		Sig. (2-tailed)	.747	.	.493
		N	14	14	14
	CD31pos51pos	Correlation Coefficient	-.176	-.200	1.000
		Sig. (2-tailed)	.548	.493	.
		N	14	14	14
	CD31pos51pos_54pos	Correlation Coefficient	.099	-.284	.512
	Sig. (2-tailed)	.736	.326	.061	
	N	14	14	14	
CD31neg54pos	Correlation Coefficient	.169	.055	-.169	
	Sig. (2-tailed)	.564	.852	.563	
	N	14	14	14	
CD31neg51pos	Correlation Coefficient	-.360	.055	.556*	
	Sig. (2-tailed)	.206	.852	.039	
	N	14	14	14	
CD31neg51pos_54pos	Correlation Coefficient	-.298	-.503	.398	
	Sig. (2-tailed)	.301	.067	.159	
	N	14	14	14	
CD31neg54pos2	Correlation Coefficient	-.351	-.270	.182	
	Sig. (2-tailed)	.218	.350	.533	
	N	14	14	14	

*. Correlation is significant at the 0.05 level (2-tailed).

. Correlation between VHISS (CCSVI severity) in SPMS

Correlations

			CD31pos51pos_54pos	CD31neg54pos	CD31neg51pos
Spearman's rho	Venous haemodynamic insufficiency severity score	Correlation Coefficient	.099	.169	-.360
		Sig. (2-tailed)	.736	.564	.206
		N	14	14	14
CD31pos		Correlation Coefficient	-.284	.055	.055
		Sig. (2-tailed)	.326	.852	.852
		N	14	14	14
CD31pos51pos		Correlation Coefficient	.512	-.169	.556*
		Sig. (2-tailed)	.061	.563	.039
		N	14	14	14
CD31pos51pos_54pos		Correlation Coefficient	1.000	.587*	.363
		Sig. (2-tailed)	.	.027	.203
		N	14	14	14
CD31neg54pos		Correlation Coefficient	.587*	1.000	.182
		Sig. (2-tailed)	.027	.	.533
		N	14	14	14
CD31neg51pos		Correlation Coefficient	.363	.182	1.000
		Sig. (2-tailed)	.203	.533	.
		N	14	14	14
CD31neg51pos_54pos		Correlation Coefficient	.451	.358	.437
		Sig. (2-tailed)	.106	.208	.118
		N	14	14	14
CD31neg54pos2		Correlation Coefficient	.565*	.578*	.407
		Sig. (2-tailed)	.035	.030	.149
		N	14	14	14

*. Correlation is significant at the 0.05 level (2-tailed).

. Correlation between VHISS (CCSVI severity) in SPMS

Correlations

			CD31neg51pos_54pos	CD31neg54pos2
Spearman's rho	Venous haemodynamic insufficiency severity score	Correlation Coefficient	-.298	-.351
		Sig. (2-tailed)	.301	.218
		N	14	14
CD31pos		Correlation Coefficient	-.503	-.270
		Sig. (2-tailed)	.067	.350
		N	14	14
CD31pos51pos		Correlation Coefficient	.398	.182
		Sig. (2-tailed)	.159	.533
		N	14	14
CD31pos51pos_54pos		Correlation Coefficient	.451	.565*
		Sig. (2-tailed)	.106	.035
		N	14	14
CD31neg54pos		Correlation Coefficient	.358	.578*
		Sig. (2-tailed)	.208	.030
		N	14	14
CD31neg51pos		Correlation Coefficient	.437	.407
		Sig. (2-tailed)	.118	.149
		N	14	14
CD31neg51pos_54pos		Correlation Coefficient	1.000	.815**
		Sig. (2-tailed)	.	.000
		N	14	14
CD31neg54pos2		Correlation Coefficient	.815**	1.000
		Sig. (2-tailed)	.000	.
		N	14	14

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

>Warning # 2003. Command name: Title

>The title given exceeds 60 characters in length. The first 60 characters will

>be used.

. Correlation between conventional MRI measures in all subje

Nonparametric Correlations

[DataSet1] C:\Users\rxz789\Documents\SPSS\VD-MRI project\CTEVD\Database\Phase I\LSU\Reduced sample size with CD31 data.sav

Correlations

			CD31pos	CD31pos51pos	CD31pos51pos_54pos
Spearman's rho	CD31pos	Correlation Coefficient	1.000	-.013	-.132
		Sig. (2-tailed)	.	.907	.228
		N	85	85	85
	CD31pos51pos	Correlation Coefficient	-.013	1.000	.490**
		Sig. (2-tailed)	.907	.	.000
		N	85	85	85
	CD31pos51pos_54pos	Correlation Coefficient	-.132	.490**	1.000
		Sig. (2-tailed)	.228	.000	.
		N	85	85	85
CD31neg54pos	Correlation Coefficient	-.018	-.126	.559**	
	Sig. (2-tailed)	.869	.251	.000	
	N	85	85	85	
CD31neg51pos	Correlation Coefficient	.060	.508**	.302**	
	Sig. (2-tailed)	.584	.000	.005	
	N	85	85	85	
CD31neg51pos_54pos	Correlation Coefficient	-.092	.299**	.489**	
	Sig. (2-tailed)	.403	.005	.000	
	N	85	85	85	
CD31neg54pos2	Correlation Coefficient	.010	.071	.132	
	Sig. (2-tailed)	.930	.516	.230	
	N	85	85	85	
Volume of T2 hyperintense lesions in cubic millimetres	Correlation Coefficient	-.117	-.082	.038	
	Sig. (2-tailed)	.288	.456	.727	
	N	85	85	85	

** . Correlation is significant at the 0.01 level (2-tailed).

. Correlation between conventional MRI measures in all subje

Correlations

			CD31neg54pos	CD31neg51pos	CD31neg51pos_54pos
Spearman's rho	CD31pos	Correlation Coefficient	-.018	.060	-.092
		Sig. (2-tailed)	.869	.584	.403
		N	85	85	85
	CD31pos51pos	Correlation Coefficient	-.126	.508**	.299**
		Sig. (2-tailed)	.251	.000	.005
		N	85	85	85
	CD31pos51pos_54pos	Correlation Coefficient	.559**	.302**	.489**
		Sig. (2-tailed)	.000	.005	.000
		N	85	85	85
	CD31neg54pos	Correlation Coefficient	1.000	.062	.177
		Sig. (2-tailed)	.	.572	.104
		N	85	85	85
	CD31neg51pos	Correlation Coefficient	.062	1.000	.394**
		Sig. (2-tailed)	.572	.	.000
		N	85	85	85
	CD31neg51pos_54pos	Correlation Coefficient	.177	.394**	1.000
		Sig. (2-tailed)	.104	.000	.
		N	85	85	85
	CD31neg54pos2	Correlation Coefficient	.212	.325**	.482**
		Sig. (2-tailed)	.051	.002	.000
		N	85	85	85
	Volume of T2 hyperintense lesions in cubic millimetres	Correlation Coefficient	.065	-.060	.084
		Sig. (2-tailed)	.557	.586	.446
		N	85	85	85

** . Correlation is significant at the 0.01 level (2-tailed).

. Correlation between conventional MRI measures in all subje

Correlations

			CD31neg54pos2	Volume of T2 hyperintense lesions in cubic millimetres	Volume of T1 hypointense lesions in cubic millimetres
Spearman's rho	CD31pos	Correlation Coefficient	.010	-.117	-.063
		Sig. (2-tailed)	.930	.288	.669
		N	85	85	49
	CD31pos51pos	Correlation Coefficient	.071	-.082	.101
		Sig. (2-tailed)	.516	.456	.490
		N	85	85	49
	CD31pos51pos_54pos	Correlation Coefficient	.132	.038	.060
		Sig. (2-tailed)	.230	.727	.681
		N	85	85	49
	CD31neg54pos	Correlation Coefficient	.212	.065	.079
		Sig. (2-tailed)	.051	.557	.588
		N	85	85	49
	CD31neg51pos	Correlation Coefficient	.325**	-.060	.282*
		Sig. (2-tailed)	.002	.586	.050
		N	85	85	49
	CD31neg51pos_54pos	Correlation Coefficient	.482**	.084	-.051
		Sig. (2-tailed)	.000	.446	.726
		N	85	85	49
	CD31neg54pos2	Correlation Coefficient	1.000	.136	-.013
		Sig. (2-tailed)	.	.215	.931
		N	85	85	49
	Volume of T2 hyperintense lesions in cubic millimetres	Correlation Coefficient	.136	1.000	.801**
		Sig. (2-tailed)	.215	.	.000
		N	85	85	49

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between conventional MRI measures in all subje

Correlations

			Volume of GAD enhancing lesions in cubic millimetres	Siemax 2.5 with inpainting normalized Brain Parenchymal Volume	Siemax 2.5 with inpainting normalized Grey Matter Volume
Spearman's rho	CD31pos	Correlation Coefficient	.125	.050	.011
		Sig. (2-tailed)	.391	.648	.922
		N	49	85	85
	CD31pos51pos	Correlation Coefficient	.095	.134	.047
		Sig. (2-tailed)	.518	.221	.670
		N	49	85	85
	CD31pos51pos_54pos	Correlation Coefficient	.151	.092	.013
		Sig. (2-tailed)	.300	.400	.905
		N	49	85	85
CD31neg54pos	Correlation Coefficient	-.135	.043	.119	
	Sig. (2-tailed)	.357	.695	.278	
	N	49	85	85	
CD31neg51pos	Correlation Coefficient	-.045	.089	.232*	
	Sig. (2-tailed)	.758	.416	.033	
	N	49	85	85	
CD31neg51pos_54pos	Correlation Coefficient	.152	-.038	.054	
	Sig. (2-tailed)	.297	.728	.622	
	N	49	85	85	
CD31neg54pos2	Correlation Coefficient	-.045	-.107	.011	
	Sig. (2-tailed)	.759	.331	.920	
	N	49	85	85	
Volume of T2 hyperintense lesions in cubic millimetres	Correlation Coefficient	.130	-.345**	-.184	
	Sig. (2-tailed)	.372	.001	.091	
	N	49	85	85	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between conventional MRI measures in all subje

Correlations

			Siemax 2.5 with inpainting normalized White Matter Volume	Siemax 2.5 with inpainting normalized Lateral Ventricular Volume	Siemax 2.5 with inpainting normalized Neocortical Volume
Spearman's rho	CD31pos	Correlation Coefficient	.032	-.082	.043
		Sig. (2-tailed)	.769	.453	.696
		N	85	85	85
	CD31pos51pos	Correlation Coefficient	.157	.083	.063
		Sig. (2-tailed)	.152	.450	.565
		N	85	85	85
	CD31pos51pos_54pos	Correlation Coefficient	.048	-.054	.010
		Sig. (2-tailed)	.661	.622	.930
		N	85	85	85
	CD31neg54pos	Correlation Coefficient	-.101	-.087	.045
		Sig. (2-tailed)	.356	.428	.683
		N	85	85	85
	CD31neg51pos	Correlation Coefficient	-.049	.117	.227*
		Sig. (2-tailed)	.658	.287	.037
		N	85	85	85
	CD31neg51pos_54pos	Correlation Coefficient	-.073	.037	.062
		Sig. (2-tailed)	.504	.739	.571
		N	85	85	85
	CD31neg54pos2	Correlation Coefficient	-.130	.151	.029
		Sig. (2-tailed)	.237	.169	.790
		N	85	85	85
	Volume of T2 hyperintense lesions in cubic millimetres	Correlation Coefficient	-.341**	.512**	-.244*
		Sig. (2-tailed)	.001	.000	.025
		N	85	85	85

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between conventional MRI measures in all subje

Correlations

			CD31pos	CD31pos51pos	CD31pos51pos_54pos
Spearman's rho	Volume of T1 hypointense lesions in cubic millimetres	Correlation Coefficient	-.063	.101	.060
		Sig. (2-tailed)	.669	.490	.681
		N	49	49	49
	Volume of GAD enhancing lesions in cubic millimetres	Correlation Coefficient	.125	.095	.151
		Sig. (2-tailed)	.391	.518	.300
		N	49	49	49
	Sienax 2.5 with inpainting normalized Brain Parenchymal Volume	Correlation Coefficient	.050	.134	.092
		Sig. (2-tailed)	.648	.221	.400
		N	85	85	85
	Sienax 2.5 with inpainting normalized Grey Matter Volume	Correlation Coefficient	.011	.047	.013
		Sig. (2-tailed)	.922	.670	.905
		N	85	85	85
	Sienax 2.5 with inpainting normalized White Matter Volume	Correlation Coefficient	.032	.157	.048
		Sig. (2-tailed)	.769	.152	.661
		N	85	85	85
	Sienax 2.5 with inpainting normalized Lateral Ventricular Volume	Correlation Coefficient	-.082	.083	-.054
		Sig. (2-tailed)	.453	.450	.622
		N	85	85	85
	Sienax 2.5 with inpainting normalized Neocortical Volume	Correlation Coefficient	.043	.063	.010
		Sig. (2-tailed)	.696	.565	.930
		N	85	85	85

. Correlation between conventional MRI measures in all subje

Correlations

			CD31neg54pos	CD31neg51pos	CD31neg51pos_54pos
Spearman's rho	Volume of T1 hypointense lesions in cubic millimetres	Correlation Coefficient	.079	.282*	-.051
		Sig. (2-tailed)	.588	.050	.726
		N	49	49	49
	Volume of GAD enhancing lesions in cubic millimetres	Correlation Coefficient	-.135	-.045	.152
		Sig. (2-tailed)	.357	.758	.297
		N	49	49	49
	Sienax 2.5 with inpainting normalized Brain Parenchymal Volume	Correlation Coefficient	.043	.089	-.038
		Sig. (2-tailed)	.695	.416	.728
N		85	85	85	
Sienax 2.5 with inpainting normalized Grey Matter Volume	Correlation Coefficient	.119	.232*	.054	
	Sig. (2-tailed)	.278	.033	.622	
	N	85	85	85	
Sienax 2.5 with inpainting normalized White Matter Volume	Correlation Coefficient	-.101	-.049	-.073	
	Sig. (2-tailed)	.356	.658	.504	
	N	85	85	85	
Sienax 2.5 with inpainting normalized Lateral Ventricular Volume	Correlation Coefficient	-.087	.117	.037	
	Sig. (2-tailed)	.428	.287	.739	
	N	85	85	85	
Sienax 2.5 with inpainting normalized Neocortical Volume	Correlation Coefficient	.045	.227*	.062	
	Sig. (2-tailed)	.683	.037	.571	
	N	85	85	85	

*. Correlation is significant at the 0.05 level (2-tailed).

. Correlation between conventional MRI measures in all subje

Correlations

			CD31neg54pos2	Volume of T2 hyperintense lesions in cubic millimetres	Volume of T1 hypointense lesions in cubic millimetres
Spearman's rho	Volume of T1 hypointense lesions in cubic millimetres	Correlation Coefficient	-.013	.801**	1.000
		Sig. (2-tailed)	.931	.000	.
		N	49	49	49
	Volume of GAD enhancing lesions in cubic millimetres	Correlation Coefficient	-.045	.130	.045
		Sig. (2-tailed)	.759	.372	.756
		N	49	49	49
	Sienax 2.5 with inpainting normalized Brain Parenchymal Volume	Correlation Coefficient	-.107	-.345**	-.252
Sig. (2-tailed)		.331	.001	.080	
N		85	85	49	
Sienax 2.5 with inpainting normalized Grey Matter Volume	Correlation Coefficient	.011	-.184	-.088	
	Sig. (2-tailed)	.920	.091	.547	
	N	85	85	49	
Sienax 2.5 with inpainting normalized White Matter Volume	Correlation Coefficient	-.130	-.341**	-.388**	
	Sig. (2-tailed)	.237	.001	.006	
	N	85	85	49	
Sienax 2.5 with inpainting normalized Lateral Ventricular Volume	Correlation Coefficient	.151	.512**	.594**	
	Sig. (2-tailed)	.169	.000	.000	
	N	85	85	49	
Sienax 2.5 with inpainting normalized Neocortical Volume	Correlation Coefficient	.029	-.244*	-.163	
	Sig. (2-tailed)	.790	.025	.264	
	N	85	85	49	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between conventional MRI measures in all subje

Correlations

			Volume of GAD enhancing lesions in cubic millimetres	Siemax 2.5 with inpainting normalized Brain Parenchymal Volume	Siemax 2.5 with inpainting normalized Grey Matter Volume
Spearman's rho	Volume of T1 hypointense lesions in cubic millimetres	Correlation Coefficient	.045	-.252	-.088
		Sig. (2-tailed)	.756	.080	.547
		N	49	49	49
	Volume of GAD enhancing lesions in cubic millimetres	Correlation Coefficient	1.000	.083	-.002
		Sig. (2-tailed)	.	.573	.989
		N	49	49	49
	Siemax 2.5 with inpainting normalized Brain Parenchymal Volume	Correlation Coefficient	.083	1.000	.748**
		Sig. (2-tailed)	.573	.	.000
N		49	85	85	
Siemax 2.5 with inpainting normalized Grey Matter Volume	Correlation Coefficient	-.002	.748**	1.000	
	Sig. (2-tailed)	.989	.000	.	
	N	49	85	85	
Siemax 2.5 with inpainting normalized White Matter Volume	Correlation Coefficient	.198	.626**	.046	
	Sig. (2-tailed)	.173	.000	.677	
	N	49	85	85	
Siemax 2.5 with inpainting normalized Lateral Ventricular Volume	Correlation Coefficient	-.097	-.468**	-.264*	
	Sig. (2-tailed)	.508	.000	.015	
	N	49	85	85	
Siemax 2.5 with inpainting normalized Neocortical Volume	Correlation Coefficient	.076	.809**	.945**	
	Sig. (2-tailed)	.605	.000	.000	
	N	49	85	85	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between conventional MRI measures in all subje

Correlations

			Siemax 2.5 with inpainting normalized White Matter Volume	Siemax 2.5 with inpainting normalized Lateral Ventricular Volume	Siemax 2.5 with inpainting normalized Neocortical Volume
Spearman's rho	Volume of T1 hypointense lesions in cubic millimetres	Correlation Coefficient	-.388**	.594**	-.163
		Sig. (2-tailed)	.006	.000	.264
		N	49	49	49
	Volume of GAD enhancing lesions in cubic millimetres	Correlation Coefficient	.198	-.097	.076
		Sig. (2-tailed)	.173	.508	.605
		N	49	49	49
	Siemax 2.5 with inpainting normalized Brain Parenchymal Volume	Correlation Coefficient	.626**	-.468**	.809**
		Sig. (2-tailed)	.000	.000	.000
		N	85	85	85
	Siemax 2.5 with inpainting normalized Grey Matter Volume	Correlation Coefficient	.046	-.264*	.945**
		Sig. (2-tailed)	.677	.015	.000
		N	85	85	85
	Siemax 2.5 with inpainting normalized White Matter Volume	Correlation Coefficient	1.000	-.446**	.195
		Sig. (2-tailed)	.	.000	.074
		N	85	85	85
	Siemax 2.5 with inpainting normalized Lateral Ventricular Volume	Correlation Coefficient	-.446**	1.000	-.356**
		Sig. (2-tailed)	.000	.	.001
		N	85	85	85
	Siemax 2.5 with inpainting normalized Neocortical Volume	Correlation Coefficient	.195	-.356**	1.000
		Sig. (2-tailed)	.074	.001	.
		N	85	85	85

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between conventional MRI measures in HC

Nonparametric Correlations

[DataSet1] C:\Users\rxz789\Documents\SPSS\VD-MRI project\CTEVD\Database\Phase I\LSU\Reduced sample size with CD31 data.sav

Correlations

			CD31pos	CD31pos51pos	CD31pos51pos_54pos
Spearman's rho	CD31pos	Correlation Coefficient	1.000	-.019	-.243
		Sig. (2-tailed)	.	.916	.173
		N	33	33	33
	CD31pos51pos	Correlation Coefficient	-.019	1.000	.353*
		Sig. (2-tailed)	.916	.	.044
		N	33	33	33
	CD31pos51pos_54pos	Correlation Coefficient	-.243	.353*	1.000
		Sig. (2-tailed)	.173	.044	.
		N	33	33	33
	CD31neg54pos	Correlation Coefficient	-.220	-.317	.563**
		Sig. (2-tailed)	.219	.072	.001
		N	33	33	33
	CD31neg51pos	Correlation Coefficient	-.046	.394*	.181
		Sig. (2-tailed)	.798	.023	.313
		N	33	33	33
	CD31neg51pos_54pos	Correlation Coefficient	-.091	.268	.294
		Sig. (2-tailed)	.613	.132	.097
		N	33	33	33
	CD31neg54pos2	Correlation Coefficient	-.162	.119	.007
		Sig. (2-tailed)	.366	.510	.971
		N	33	33	33
	Volume of T2 hyperintense lesions in cubic millimetres	Correlation Coefficient	.241	-.304	-.441*
		Sig. (2-tailed)	.177	.085	.010
		N	33	33	33

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

. Correlation between conventional MRI measures in HC

Correlations

			CD31neg54pos	CD31neg51pos	CD31neg51pos_54pos
Spearman's rho	CD31pos	Correlation Coefficient	-.220	-.046	-.091
		Sig. (2-tailed)	.219	.798	.613
		N	33	33	33
	CD31pos51pos	Correlation Coefficient	-.317	.394*	.268
		Sig. (2-tailed)	.072	.023	.132
		N	33	33	33
	CD31pos51pos_54pos	Correlation Coefficient	.563**	.181	.294
		Sig. (2-tailed)	.001	.313	.097
		N	33	33	33
	CD31neg54pos	Correlation Coefficient	1.000	-.056	-.097
		Sig. (2-tailed)	.	.756	.591
		N	33	33	33
	CD31neg51pos	Correlation Coefficient	-.056	1.000	.320
		Sig. (2-tailed)	.756	.	.069
		N	33	33	33
	CD31neg51pos_54pos	Correlation Coefficient	-.097	.320	1.000
		Sig. (2-tailed)	.591	.069	.
		N	33	33	33
	CD31neg54pos2	Correlation Coefficient	-.094	.368*	.536**
		Sig. (2-tailed)	.604	.035	.001
		N	33	33	33
	Volume of T2 hyperintense lesions in cubic millimetres	Correlation Coefficient	-.176	-.202	-.112
		Sig. (2-tailed)	.326	.260	.536
		N	33	33	33

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

. Correlation between conventional MRI measures in HC

Correlations

			CD31neg54pos2	Volume of T2 hyperintense lesions in cubic millimetres	Volume of T1 hypointense lesions in cubic millimetres
Spearman's rho	CD31pos	Correlation Coefficient	-.162	.241	.
		Sig. (2-tailed)	.366	.177	.
		N	33	33	0
	CD31pos51pos	Correlation Coefficient	.119	-.304	.
		Sig. (2-tailed)	.510	.085	.
		N	33	33	0
	CD31pos51pos_54pos	Correlation Coefficient	.007	-.441*	.
		Sig. (2-tailed)	.971	.010	.
		N	33	33	0
	CD31neg54pos	Correlation Coefficient	-.094	-.176	.
Sig. (2-tailed)		.604	.326	.	
N		33	33	0	
CD31neg51pos	Correlation Coefficient	.368*	-.202	.	
	Sig. (2-tailed)	.035	.260	.	
	N	33	33	0	
CD31neg51pos_54pos	Correlation Coefficient	.536**	-.112	.	
	Sig. (2-tailed)	.001	.536	.	
	N	33	33	0	
CD31neg54pos2	Correlation Coefficient	1.000	.262	.	
	Sig. (2-tailed)	.	.140	.	
	N	33	33	0	
Volume of T2 hyperintense lesions in cubic millimetres	Correlation Coefficient	.262	1.000	.	
	Sig. (2-tailed)	.140	.	.	
	N	33	33	0	

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

. Correlation between conventional MRI measures in HC

Correlations

			Volume of GAD enhancing lesions in cubic millimetres	Siemax 2.5 with inpainting normalized Brain Parenchymal Volume	Siemax 2.5 with inpainting normalized Grey Matter Volume
Spearman's rho	CD31pos	Correlation Coefficient	.	-.134	-.106
		Sig. (2-tailed)	.	.456	.559
		N	0	33	33
	CD31pos51pos	Correlation Coefficient	.	-.127	-.139
		Sig. (2-tailed)	.	.480	.440
		N	0	33	33
	CD31pos51pos_54pos	Correlation Coefficient	.	.045	-.070
		Sig. (2-tailed)	.	.803	.698
		N	0	33	33
CD31neg54pos	Correlation Coefficient	.	.082	-.015	
	Sig. (2-tailed)	.	.651	.935	
	N	0	33	33	
CD31neg51pos	Correlation Coefficient	.	-.304	-.081	
	Sig. (2-tailed)	.	.085	.653	
	N	0	33	33	
CD31neg51pos_54pos	Correlation Coefficient	.	-.173	-.034	
	Sig. (2-tailed)	.	.334	.853	
	N	0	33	33	
CD31neg54pos2	Correlation Coefficient	.	-.211	-.012	
	Sig. (2-tailed)	.	.238	.947	
	N	0	33	33	
Volume of T2 hyperintense lesions in cubic millimetres	Correlation Coefficient	.	.114	.214	
	Sig. (2-tailed)	.	.528	.231	
	N	0	33	33	

. Correlation between conventional MRI measures in HC

Correlations

			Siemax 2.5 with inpainting normalized White Matter Volume	Siemax 2.5 with inpainting normalized Lateral Ventricular Volume	Siemax 2.5 with inpainting normalized Neocortical Volume
Spearman's rho	CD31pos	Correlation Coefficient	-.204	.161	-.138
		Sig. (2-tailed)	.255	.369	.444
		N	33	33	33
	CD31pos51pos	Correlation Coefficient	.042	.222	-.133
		Sig. (2-tailed)	.815	.215	.461
		N	33	33	33
	CD31pos51pos_54pos	Correlation Coefficient	.159	-.179	-.089
		Sig. (2-tailed)	.376	.318	.624
		N	33	33	33
CD31neg54pos	Correlation Coefficient	.125	-.250	-.038	
	Sig. (2-tailed)	.489	.161	.835	
	N	33	33	33	
CD31neg51pos	Correlation Coefficient	-.261	.397*	-.083	
	Sig. (2-tailed)	.143	.022	.644	
	N	33	33	33	
CD31neg51pos_54pos	Correlation Coefficient	-.150	.113	.024	
	Sig. (2-tailed)	.404	.530	.893	
	N	33	33	33	
CD31neg54pos2	Correlation Coefficient	-.234	.246	.012	
	Sig. (2-tailed)	.190	.167	.948	
	N	33	33	33	
Volume of T2 hyperintense lesions in cubic millimetres	Correlation Coefficient	-.203	.207	.209	
	Sig. (2-tailed)	.258	.248	.243	
	N	33	33	33	

*. Correlation is significant at the 0.05 level (2-tailed).

. Correlation between conventional MRI measures in HC

Correlations

			CD31pos	CD31pos51pos	CD31pos51pos_54pos
Spearman's rho	Volume of T1 hypointense lesions in cubic millimetres	Correlation Coefficient	.	.	.
		Sig. (2-tailed)	.	.	.
		N	0	0	0
	Volume of GAD enhancing lesions in cubic millimetres	Correlation Coefficient	.	.	.
		Sig. (2-tailed)	.	.	.
		N	0	0	0
	Sienax 2.5 with inpainting normalized Brain Parenchymal Volume	Correlation Coefficient	-.134	-.127	.045
		Sig. (2-tailed)	.456	.480	.803
N		33	33	33	
Sienax 2.5 with inpainting normalized Grey Matter Volume	Correlation Coefficient	-.106	-.139	-.070	
	Sig. (2-tailed)	.559	.440	.698	
	N	33	33	33	
Sienax 2.5 with inpainting normalized White Matter Volume	Correlation Coefficient	-.204	.042	.159	
	Sig. (2-tailed)	.255	.815	.376	
	N	33	33	33	
Sienax 2.5 with inpainting normalized Lateral Ventricular Volume	Correlation Coefficient	.161	.222	-.179	
	Sig. (2-tailed)	.369	.215	.318	
	N	33	33	33	
Sienax 2.5 with inpainting normalized Neocortical Volume	Correlation Coefficient	-.138	-.133	-.089	
	Sig. (2-tailed)	.444	.461	.624	
	N	33	33	33	

. Correlation between conventional MRI measures in HC

Correlations

			CD31neg54pos	CD31neg51pos	CD31neg51pos_54pos
Spearman's rho	Volume of T1 hypointense lesions in cubic millimetres	Correlation Coefficient	.	.	.
		Sig. (2-tailed)	.	.	.
		N	0	0	0
	Volume of GAD enhancing lesions in cubic millimetres	Correlation Coefficient	.	.	.
		Sig. (2-tailed)	.	.	.
		N	0	0	0
	Sienax 2.5 with inpainting normalized Brain Parenchymal Volume	Correlation Coefficient	.082	-.304	-.173
		Sig. (2-tailed)	.651	.085	.334
N		33	33	33	
Sienax 2.5 with inpainting normalized Grey Matter Volume	Correlation Coefficient	-.015	-.081	-.034	
	Sig. (2-tailed)	.935	.653	.853	
	N	33	33	33	
Sienax 2.5 with inpainting normalized White Matter Volume	Correlation Coefficient	.125	-.261	-.150	
	Sig. (2-tailed)	.489	.143	.404	
	N	33	33	33	
Sienax 2.5 with inpainting normalized Lateral Ventricular Volume	Correlation Coefficient	-.250	.397*	.113	
	Sig. (2-tailed)	.161	.022	.530	
	N	33	33	33	
Sienax 2.5 with inpainting normalized Neocortical Volume	Correlation Coefficient	-.038	-.083	.024	
	Sig. (2-tailed)	.835	.644	.893	
	N	33	33	33	

*. Correlation is significant at the 0.05 level (2-tailed).

. Correlation between conventional MRI measures in HC

Correlations

			CD31neg54pos2	Volume of T2 hyperintense lesions in cubic millimetres	Volume of T1 hypointense lesions in cubic millimetres
Spearman's rho	Volume of T1 hypointense lesions in cubic millimetres	Correlation Coefficient Sig. (2-tailed) N	. . 0	. . 0	. . 0
	Volume of GAD enhancing lesions in cubic millimetres	Correlation Coefficient Sig. (2-tailed) N	. . 0	. . 0	. . 0
	Sienax 2.5 with inpainting normalized Brain Parenchymal Volume	Correlation Coefficient Sig. (2-tailed) N	-.211 .238 33	.114 .528 33	. . 0
	Sienax 2.5 with inpainting normalized Grey Matter Volume	Correlation Coefficient Sig. (2-tailed) N	-.012 .947 33	.214 .231 33	. . 0
	Sienax 2.5 with inpainting normalized White Matter Volume	Correlation Coefficient Sig. (2-tailed) N	-.234 .190 33	-.203 .258 33	. . 0
	Sienax 2.5 with inpainting normalized Lateral Ventricular Volume	Correlation Coefficient Sig. (2-tailed) N	.246 .167 33	.207 .248 33	. . 0
	Sienax 2.5 with inpainting normalized Neocortical Volume	Correlation Coefficient Sig. (2-tailed) N	.012 .948 33	.209 .243 33	. . 0

. Correlation between conventional MRI measures in HC

Correlations

			Volume of GAD enhancing lesions in cubic millimetres	Siemax 2.5 with inpainting normalized Brain Parenchymal Volume	Siemax 2.5 with inpainting normalized Grey Matter Volume
Spearman's rho	Volume of T1 hypointense lesions in cubic millimetres	Correlation Coefficient Sig. (2-tailed) N	. . 0	. . 0	. . 0
	Volume of GAD enhancing lesions in cubic millimetres	Correlation Coefficient Sig. (2-tailed) N	. . 0	. . 0	. . 0
	Siemax 2.5 with inpainting normalized Brain Parenchymal Volume	Correlation Coefficient Sig. (2-tailed) N	. . 0	1.000 . 33	.754** .000 33
	Siemax 2.5 with inpainting normalized Grey Matter Volume	Correlation Coefficient Sig. (2-tailed) N	. . 0	.754** .000 33	1.000 . 33
	Siemax 2.5 with inpainting normalized White Matter Volume	Correlation Coefficient Sig. (2-tailed) N	. . 0	.528** .002 33	-.102 .574 33
	Siemax 2.5 with inpainting normalized Lateral Ventricular Volume	Correlation Coefficient Sig. (2-tailed) N	. . 0	-.411* .018 33	-.152 .397 33
	Siemax 2.5 with inpainting normalized Neocortical Volume	Correlation Coefficient Sig. (2-tailed) N	. . 0	.799** .000 33	.933** .000 33

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

. Correlation between conventional MRI measures in HC

Correlations

			Siенax 2.5 with inpainting normalized White Matter Volume	Siенax 2.5 with inpainting normalized Lateral Ventricular Volume	Siенax 2.5 with inpainting normalized Neocortical Volume
Spearman's rho	Volume of T1 hypointense lesions in cubic millimetres	Correlation Coefficient Sig. (2-tailed) N	. . 0	. . 0	. . 0
	Volume of GAD enhancing lesions in cubic millimetres	Correlation Coefficient Sig. (2-tailed) N	. . 0	. . 0	. . 0
	Siенax 2.5 with inpainting normalized Brain Parenchymal Volume	Correlation Coefficient Sig. (2-tailed) N	.528** .002 33	-.411* .018 33	.799** .000 33
	Siенax 2.5 with inpainting normalized Grey Matter Volume	Correlation Coefficient Sig. (2-tailed) N	-.102 .574 33	-.152 .397 33	.933** .000 33
	Siенax 2.5 with inpainting normalized White Matter Volume	Correlation Coefficient Sig. (2-tailed) N	1.000 . 33	-.398* .022 33	.047 .793 33
	Siенax 2.5 with inpainting normalized Lateral Ventricular Volume	Correlation Coefficient Sig. (2-tailed) N	-.398* .022 33	1.000 . 33	-.318 .072 33
	Siенax 2.5 with inpainting normalized Neocortical Volume	Correlation Coefficient Sig. (2-tailed) N	.047 .793 33	-.318 .072 33	1.000 . 33

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

. Correlation between conventional MRI measures in MS

Nonparametric Correlations

[DataSet1] C:\Users\rxz789\Documents\SPSS\VD-MRI project\CTEVD\Database\Phase I\LSU\Reduced sample size with CD31 data.sav

Correlations

			CD31pos	CD31pos51pos	CD31pos51pos_54pos
Spearman's rho	CD31pos	Correlation Coefficient	1.000	-.043	-.016
		Sig. (2-tailed)	.	.763	.910
		N	52	52	52
	CD31pos51pos	Correlation Coefficient	-.043	1.000	.604**
		Sig. (2-tailed)	.763	.	.000
		N	52	52	52
	CD31pos51pos_54pos	Correlation Coefficient	-.016	.604**	1.000
		Sig. (2-tailed)	.910	.000	.
		N	52	52	52
	CD31neg54pos	Correlation Coefficient	.143	.002	.531**
		Sig. (2-tailed)	.313	.990	.000
		N	52	52	52
	CD31neg51pos	Correlation Coefficient	.113	.505**	.458**
		Sig. (2-tailed)	.426	.000	.001
		N	52	52	52
	CD31neg51pos_54pos	Correlation Coefficient	-.044	.349*	.632**
		Sig. (2-tailed)	.758	.011	.000
		N	52	52	52
	CD31neg54pos2	Correlation Coefficient	.164	.070	.237
		Sig. (2-tailed)	.246	.624	.091
		N	52	52	52
	Volume of T2 hyperintense lesions in cubic millimetres	Correlation Coefficient	-.125	.130	.140
		Sig. (2-tailed)	.378	.358	.322
		N	52	52	52

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between conventional MRI measures in MS

Correlations

			CD31neg54pos	CD31neg51pos	CD31neg51pos_54pos
Spearman's rho	CD31pos	Correlation Coefficient	.143	.113	-.044
		Sig. (2-tailed)	.313	.426	.758
		N	52	52	52
	CD31pos51pos	Correlation Coefficient	.002	.505**	.349*
		Sig. (2-tailed)	.990	.000	.011
		N	52	52	52
	CD31pos51pos_54pos	Correlation Coefficient	.531**	.458**	.632**
		Sig. (2-tailed)	.000	.001	.000
		N	52	52	52
	CD31neg54pos	Correlation Coefficient	1.000	.215	.358**
		Sig. (2-tailed)	.	.125	.009
		N	52	52	52
	CD31neg51pos	Correlation Coefficient	.215	1.000	.487**
		Sig. (2-tailed)	.125	.	.000
		N	52	52	52
	CD31neg51pos_54pos	Correlation Coefficient	.358**	.487**	1.000
		Sig. (2-tailed)	.009	.000	.
		N	52	52	52
	CD31neg54pos2	Correlation Coefficient	.392**	.381**	.448**
		Sig. (2-tailed)	.004	.005	.001
		N	52	52	52
	Volume of T2 hyperintense lesions in cubic millimetres	Correlation Coefficient	.104	.188	.091
		Sig. (2-tailed)	.462	.181	.520
		N	52	52	52

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between conventional MRI measures in MS

Correlations

			CD31neg54pos2	Volume of T2 hyperintense lesions in cubic millimetres	Volume of T1 hypointense lesions in cubic millimetres
Spearman's rho	CD31pos	Correlation Coefficient	.164	-.125	-.063
		Sig. (2-tailed)	.246	.378	.669
		N	52	52	49
	CD31pos51pos	Correlation Coefficient	.070	.130	.101
		Sig. (2-tailed)	.624	.358	.490
		N	52	52	49
	CD31pos51pos_54pos	Correlation Coefficient	.237	.140	.060
		Sig. (2-tailed)	.091	.322	.681
		N	52	52	49
	CD31neg54pos	Correlation Coefficient	.392**	.104	.079
		Sig. (2-tailed)	.004	.462	.588
		N	52	52	49
	CD31neg51pos	Correlation Coefficient	.381**	.188	.282*
		Sig. (2-tailed)	.005	.181	.050
		N	52	52	49
	CD31neg51pos_54pos	Correlation Coefficient	.448**	.091	-.051
		Sig. (2-tailed)	.001	.520	.726
		N	52	52	49
	CD31neg54pos2	Correlation Coefficient	1.000	-.021	-.013
		Sig. (2-tailed)	.	.881	.931
		N	52	52	49
	Volume of T2 hyperintense lesions in cubic millimetres	Correlation Coefficient	-.021	1.000	.801**
		Sig. (2-tailed)	.881	.	.000
		N	52	52	49

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between conventional MRI measures in MS

Correlations

			Volume of GAD enhancing lesions in cubic millimetres	Siemax 2.5 with inpainting normalized Brain Parenchymal Volume	Siemax 2.5 with inpainting normalized Grey Matter Volume
Spearman's rho	CD31pos	Correlation Coefficient	.125	.024	-.013
		Sig. (2-tailed)	.391	.864	.927
		N	49	52	52
	CD31pos51pos	Correlation Coefficient	.095	.241	.106
		Sig. (2-tailed)	.518	.086	.453
		N	49	52	52
	CD31pos51pos_54pos	Correlation Coefficient	.151	.235	.182
		Sig. (2-tailed)	.300	.094	.197
		N	49	52	52
	CD31neg54pos	Correlation Coefficient	-.135	.066	.270
		Sig. (2-tailed)	.357	.641	.053
		N	49	52	52
	CD31neg51pos	Correlation Coefficient	-.045	.238	.309*
		Sig. (2-tailed)	.758	.089	.026
		N	49	52	52
	CD31neg51pos_54pos	Correlation Coefficient	.152	.111	.183
		Sig. (2-tailed)	.297	.432	.194
		N	49	52	52
	CD31neg54pos2	Correlation Coefficient	-.045	.010	.084
		Sig. (2-tailed)	.759	.943	.552
		N	49	52	52
	Volume of T2 hyperintense lesions in cubic millimetres	Correlation Coefficient	.130	-.330*	-.070
		Sig. (2-tailed)	.372	.017	.622
		N	49	52	52

*. Correlation is significant at the 0.05 level (2-tailed).

. Correlation between conventional MRI measures in MS

Correlations

			Siенax 2.5 with inpainting normalized White Matter Volume	Siенax 2.5 with inpainting normalized Lateral Ventricular Volume	Siенax 2.5 with inpainting normalized Neocortical Volume
Spearman's rho	CD31pos	Correlation Coefficient	.122	-.053	.071
		Sig. (2-tailed)	.390	.707	.618
		N	52	52	52
	CD31pos51pos	Correlation Coefficient	.155	.061	.115
		Sig. (2-tailed)	.272	.666	.418
		N	52	52	52
	CD31pos51pos_54pos	Correlation Coefficient	.029	-.122	.177
		Sig. (2-tailed)	.837	.389	.209
		N	52	52	52
CD31neg54pos	Correlation Coefficient	-.227	-.064	.159	
	Sig. (2-tailed)	.106	.650	.261	
	N	52	52	52	
CD31neg51pos	Correlation Coefficient	.025	.059	.321*	
	Sig. (2-tailed)	.859	.679	.020	
	N	52	52	52	
CD31neg51pos_54pos	Correlation Coefficient	.026	-.102	.144	
	Sig. (2-tailed)	.856	.470	.308	
	N	52	52	52	
CD31neg54pos2	Correlation Coefficient	-.058	.012	.094	
	Sig. (2-tailed)	.680	.935	.508	
	N	52	52	52	
Volume of T2 hyperintense lesions in cubic millimetres	Correlation Coefficient	-.407**	.482**	-.184	
	Sig. (2-tailed)	.003	.000	.191	
	N	52	52	52	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between conventional MRI measures in MS

Correlations

			CD31pos	CD31pos51pos	CD31pos51pos_54pos
Spearman's rho	Volume of T1 hypointense lesions in cubic millimetres	Correlation Coefficient	-.063	.101	.060
		Sig. (2-tailed)	.669	.490	.681
		N	49	49	49
	Volume of GAD enhancing lesions in cubic millimetres	Correlation Coefficient	.125	.095	.151
		Sig. (2-tailed)	.391	.518	.300
		N	49	49	49
	Sienax 2.5 with inpainting normalized Brain Parenchymal Volume	Correlation Coefficient	.024	.241	.235
		Sig. (2-tailed)	.864	.086	.094
N		52	52	52	
Sienax 2.5 with inpainting normalized Grey Matter Volume	Correlation Coefficient	-.013	.106	.182	
	Sig. (2-tailed)	.927	.453	.197	
	N	52	52	52	
Sienax 2.5 with inpainting normalized White Matter Volume	Correlation Coefficient	.122	.155	.029	
	Sig. (2-tailed)	.390	.272	.837	
	N	52	52	52	
Sienax 2.5 with inpainting normalized Lateral Ventricular Volume	Correlation Coefficient	-.053	.061	-.122	
	Sig. (2-tailed)	.707	.666	.389	
	N	52	52	52	
Sienax 2.5 with inpainting normalized Neocortical Volume	Correlation Coefficient	.071	.115	.177	
	Sig. (2-tailed)	.618	.418	.209	
	N	52	52	52	

. Correlation between conventional MRI measures in MS

Correlations

			CD31neg54pos	CD31neg51pos	CD31neg51pos_54pos
Spearman's rho	Volume of T1 hypointense lesions in cubic millimetres	Correlation Coefficient	.079	.282*	-.051
		Sig. (2-tailed)	.588	.050	.726
		N	49	49	49
	Volume of GAD enhancing lesions in cubic millimetres	Correlation Coefficient	-.135	-.045	.152
		Sig. (2-tailed)	.357	.758	.297
		N	49	49	49
	Sienax 2.5 with inpainting normalized Brain Parenchymal Volume	Correlation Coefficient	.066	.238	.111
		Sig. (2-tailed)	.641	.089	.432
N		52	52	52	
Sienax 2.5 with inpainting normalized Grey Matter Volume	Correlation Coefficient	.270	.309*	.183	
	Sig. (2-tailed)	.053	.026	.194	
	N	52	52	52	
Sienax 2.5 with inpainting normalized White Matter Volume	Correlation Coefficient	-.227	.025	.026	
	Sig. (2-tailed)	.106	.859	.856	
	N	52	52	52	
Sienax 2.5 with inpainting normalized Lateral Ventricular Volume	Correlation Coefficient	-.064	.059	-.102	
	Sig. (2-tailed)	.650	.679	.470	
	N	52	52	52	
Sienax 2.5 with inpainting normalized Neocortical Volume	Correlation Coefficient	.159	.321*	.144	
	Sig. (2-tailed)	.261	.020	.308	
	N	52	52	52	

*. Correlation is significant at the 0.05 level (2-tailed).

. Correlation between conventional MRI measures in MS

Correlations

			CD31neg54pos2	Volume of T2 hyperintense lesions in cubic millimetres	Volume of T1 hypointense lesions in cubic millimetres
Spearman's rho	Volume of T1 hypointense lesions in cubic millimetres	Correlation Coefficient	-.013	.801**	1.000
		Sig. (2-tailed)	.931	.000	.
		N	49	49	49
	Volume of GAD enhancing lesions in cubic millimetres	Correlation Coefficient	-.045	.130	.045
		Sig. (2-tailed)	.759	.372	.756
		N	49	49	49
	Sienax 2.5 with inpainting normalized Brain Parenchymal Volume	Correlation Coefficient	.010	-.330*	-.252
Sig. (2-tailed)		.943	.017	.080	
N		52	52	49	
Sienax 2.5 with inpainting normalized Grey Matter Volume	Correlation Coefficient	.084	-.070	-.088	
	Sig. (2-tailed)	.552	.622	.547	
	N	52	52	49	
Sienax 2.5 with inpainting normalized White Matter Volume	Correlation Coefficient	-.058	-.407**	-.388**	
	Sig. (2-tailed)	.680	.003	.006	
	N	52	52	49	
Sienax 2.5 with inpainting normalized Lateral Ventricular Volume	Correlation Coefficient	.012	.482**	.594**	
	Sig. (2-tailed)	.935	.000	.000	
	N	52	52	49	
Sienax 2.5 with inpainting normalized Neocortical Volume	Correlation Coefficient	.094	-.184	-.163	
	Sig. (2-tailed)	.508	.191	.264	
	N	52	52	49	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between conventional MRI measures in MS

Correlations

			Volume of GAD enhancing lesions in cubic millimetres	Siemax 2.5 with inpainting normalized Brain Parenchymal Volume	Siemax 2.5 with inpainting normalized Grey Matter Volume
Spearman's rho	Volume of T1 hypointense lesions in cubic millimetres	Correlation Coefficient	.045	-.252	-.088
		Sig. (2-tailed)	.756	.080	.547
		N	49	49	49
	Volume of GAD enhancing lesions in cubic millimetres	Correlation Coefficient	1.000	.083	-.002
		Sig. (2-tailed)	.	.573	.989
		N	49	49	49
	Siemax 2.5 with inpainting normalized Brain Parenchymal Volume	Correlation Coefficient	.083	1.000	.727**
		Sig. (2-tailed)	.573	.	.000
N		49	52	52	
Siemax 2.5 with inpainting normalized Grey Matter Volume	Correlation Coefficient	-.002	.727**	1.000	
	Sig. (2-tailed)	.989	.000	.	
	N	49	52	52	
Siemax 2.5 with inpainting normalized White Matter Volume	Correlation Coefficient	.198	.653**	.113	
	Sig. (2-tailed)	.173	.000	.425	
	N	49	52	52	
Siemax 2.5 with inpainting normalized Lateral Ventricular Volume	Correlation Coefficient	-.097	-.417**	-.287*	
	Sig. (2-tailed)	.508	.002	.039	
	N	49	52	52	
Siemax 2.5 with inpainting normalized Neocortical Volume	Correlation Coefficient	.076	.811**	.928**	
	Sig. (2-tailed)	.605	.000	.000	
	N	49	52	52	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between conventional MRI measures in MS

Correlations

			Siенax 2.5 with inpainting normalized White Matter Volume	Siенax 2.5 with inpainting normalized Lateral Ventricular Volume	Siенax 2.5 with inpainting normalized Neocortical Volume
Spearman's rho	Volume of T1 hypointense lesions in cubic millimetres	Correlation Coefficient	-.388**	.594**	-.163
		Sig. (2-tailed)	.006	.000	.264
		N	49	49	49
	Volume of GAD enhancing lesions in cubic millimetres	Correlation Coefficient	.198	-.097	.076
		Sig. (2-tailed)	.173	.508	.605
		N	49	49	49
	Siенax 2.5 with inpainting normalized Brain Parenchymal Volume	Correlation Coefficient	.653**	-.417**	.811**
		Sig. (2-tailed)	.000	.002	.000
		N	52	52	52
	Siенax 2.5 with inpainting normalized Grey Matter Volume	Correlation Coefficient	.113	-.287*	.928**
		Sig. (2-tailed)	.425	.039	.000
		N	52	52	52
	Siенax 2.5 with inpainting normalized White Matter Volume	Correlation Coefficient	1.000	-.467**	.277*
		Sig. (2-tailed)	.	.000	.047
		N	52	52	52
	Siенax 2.5 with inpainting normalized Lateral Ventricular Volume	Correlation Coefficient	-.467**	1.000	-.306*
		Sig. (2-tailed)	.000	.	.027
		N	52	52	52
	Siенax 2.5 with inpainting normalized Neocortical Volume	Correlation Coefficient	.277*	-.306*	1.000
		Sig. (2-tailed)	.047	.027	.
		N	52	52	52

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between conventional MRI measures in RRMS

Nonparametric Correlations

[DataSet1] C:\Users\rxz789\Documents\SPSS\VD-MRI project\CTEVD\Database\Phase I\LSU\Reduced sample size with CD31 data.sav

Correlations

			CD31pos	CD31pos51pos	CD31pos51pos_54pos
Spearman's rho	CD31pos	Correlation Coefficient	1.000	-.020	.021
		Sig. (2-tailed)	.	.906	.900
		N	38	38	38
	CD31pos51pos	Correlation Coefficient	-.020	1.000	.648**
		Sig. (2-tailed)	.906	.	.000
		N	38	38	38
	CD31pos51pos_54pos	Correlation Coefficient	.021	.648**	1.000
		Sig. (2-tailed)	.900	.000	.
		N	38	38	38
	CD31neg54pos	Correlation Coefficient	.139	.055	.482**
		Sig. (2-tailed)	.406	.744	.002
		N	38	38	38
	CD31neg51pos	Correlation Coefficient	.144	.457**	.516**
		Sig. (2-tailed)	.387	.004	.001
		N	38	38	38
	CD31neg51pos_54pos	Correlation Coefficient	.049	.341*	.687**
		Sig. (2-tailed)	.770	.036	.000
		N	38	38	38
	CD31neg54pos2	Correlation Coefficient	.277	.012	.129
		Sig. (2-tailed)	.093	.941	.440
		N	38	38	38
	Volume of T2 hyperintense lesions in cubic millimetres	Correlation Coefficient	-.112	.197	.229
		Sig. (2-tailed)	.502	.237	.167
		N	38	38	38

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between conventional MRI measures in RRMS

Correlations

			CD31neg54pos	CD31neg51pos	CD31neg51pos_54pos
Spearman's rho	CD31pos	Correlation Coefficient	.139	.144	.049
		Sig. (2-tailed)	.406	.387	.770
		N	38	38	38
	CD31pos51pos	Correlation Coefficient	.055	.457**	.341*
		Sig. (2-tailed)	.744	.004	.036
		N	38	38	38
	CD31pos51pos_54pos	Correlation Coefficient	.482**	.516**	.687**
		Sig. (2-tailed)	.002	.001	.000
		N	38	38	38
	CD31neg54pos	Correlation Coefficient	1.000	.250	.359*
		Sig. (2-tailed)	.	.130	.027
		N	38	38	38
	CD31neg51pos	Correlation Coefficient	.250	1.000	.522**
		Sig. (2-tailed)	.130	.	.001
		N	38	38	38
	CD31neg51pos_54pos	Correlation Coefficient	.359*	.522**	1.000
		Sig. (2-tailed)	.027	.001	.
		N	38	38	38
	CD31neg54pos2	Correlation Coefficient	.316	.350*	.332*
		Sig. (2-tailed)	.053	.031	.042
		N	38	38	38
	Volume of T2 hyperintense lesions in cubic millimetres	Correlation Coefficient	.121	.263	.151
		Sig. (2-tailed)	.469	.110	.367
		N	38	38	38

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between conventional MRI measures in RRMS

Correlations

			CD31neg54pos ²	Volume of T2 hyperintense lesions in cubic millimetres	Volume of T1 hypointense lesions in cubic millimetres
Spearman's rho	CD31pos	Correlation Coefficient	.277	-.112	-.115
		Sig. (2-tailed)	.093	.502	.512
		N	38	38	35
	CD31pos51pos	Correlation Coefficient	.012	.197	.216
		Sig. (2-tailed)	.941	.237	.213
		N	38	38	35
	CD31pos51pos_54pos	Correlation Coefficient	.129	.229	.175
		Sig. (2-tailed)	.440	.167	.315
		N	38	38	35
	CD31neg54pos	Correlation Coefficient	.316	.121	.141
		Sig. (2-tailed)	.053	.469	.417
		N	38	38	35
	CD31neg51pos	Correlation Coefficient	.350 [*]	.263	.358 [*]
		Sig. (2-tailed)	.031	.110	.035
		N	38	38	35
	CD31neg51pos_54pos	Correlation Coefficient	.332 [*]	.151	.127
		Sig. (2-tailed)	.042	.367	.466
		N	38	38	35
	CD31neg54pos2	Correlation Coefficient	1.000	.015	.047
		Sig. (2-tailed)	.	.928	.790
		N	38	38	35
	Volume of T2 hyperintense lesions in cubic millimetres	Correlation Coefficient	.015	1.000	.771 ^{**}
		Sig. (2-tailed)	.928	.	.000
		N	38	38	35

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between conventional MRI measures in RRMS

Correlations

			Volume of GAD enhancing lesions in cubic millimetres	Siemax 2.5 with inpainting normalized Brain Parenchymal Volume	Siemax 2.5 with inpainting normalized Grey Matter Volume
Spearman's rho	CD31pos	Correlation Coefficient	.147	.048	-.055
		Sig. (2-tailed)	.400	.776	.743
		N	35	38	38
	CD31pos51pos	Correlation Coefficient	.109	.247	.060
		Sig. (2-tailed)	.532	.135	.720
		N	35	38	38
	CD31pos51pos_54pos	Correlation Coefficient	.130	.215	.091
		Sig. (2-tailed)	.458	.195	.588
		N	35	38	38
	CD31neg54pos	Correlation Coefficient	-.196	.073	.302
Sig. (2-tailed)		.259	.661	.065	
N		35	38	38	
CD31neg51pos	Correlation Coefficient	-.044	.239	.292	
	Sig. (2-tailed)	.804	.149	.075	
	N	35	38	38	
CD31neg51pos_54pos	Correlation Coefficient	.103	.072	.123	
	Sig. (2-tailed)	.556	.667	.462	
	N	35	38	38	
CD31neg54pos2	Correlation Coefficient	-.059	-.072	-.003	
	Sig. (2-tailed)	.737	.666	.985	
	N	35	38	38	
Volume of T2 hyperintense lesions in cubic millimetres	Correlation Coefficient	.199	-.275	.106	
	Sig. (2-tailed)	.251	.095	.527	
	N	35	38	38	

. Correlation between conventional MRI measures in RRMS

Correlations

			Siенax 2.5 with inpainting normalized White Matter Volume	Siенax 2.5 with inpainting normalized Lateral Ventricular Volume	Siенax 2.5 with inpainting normalized Neocortical Volume
Spearman's rho	CD31pos	Correlation Coefficient	.154	-.172	.038
		Sig. (2-tailed)	.357	.301	.820
		N	38	38	38
	CD31pos51pos	Correlation Coefficient	.174	.208	.070
		Sig. (2-tailed)	.295	.209	.676
		N	38	38	38
	CD31pos51pos_54pos	Correlation Coefficient	.100	.029	.107
		Sig. (2-tailed)	.550	.865	.524
		N	38	38	38
	CD31neg54pos	Correlation Coefficient	-.168	-.060	.194
		Sig. (2-tailed)	.312	.722	.243
		N	38	38	38
	CD31neg51pos	Correlation Coefficient	.024	.054	.366*
		Sig. (2-tailed)	.885	.749	.024
		N	38	38	38
	CD31neg51pos_54pos	Correlation Coefficient	-.022	.011	.148
		Sig. (2-tailed)	.897	.950	.376
		N	38	38	38
	CD31neg54pos2	Correlation Coefficient	-.031	.084	.061
		Sig. (2-tailed)	.853	.615	.716
		N	38	38	38
	Volume of T2 hyperintense lesions in cubic millimetres	Correlation Coefficient	-.429**	.441**	.023
		Sig. (2-tailed)	.007	.006	.892
		N	38	38	38

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between conventional MRI measures in RRMS

Correlations

			CD31pos	CD31pos51pos	CD31pos51pos_54pos
Spearman's rho	Volume of T1 hypointense lesions in cubic millimetres	Correlation Coefficient	-.115	.216	.175
		Sig. (2-tailed)	.512	.213	.315
		N	35	35	35
	Volume of GAD enhancing lesions in cubic millimetres	Correlation Coefficient	.147	.109	.130
		Sig. (2-tailed)	.400	.532	.458
		N	35	35	35
	Sienax 2.5 with inpainting normalized Brain Parenchymal Volume	Correlation Coefficient	.048	.247	.215
		Sig. (2-tailed)	.776	.135	.195
		N	38	38	38
	Sienax 2.5 with inpainting normalized Grey Matter Volume	Correlation Coefficient	-.055	.060	.091
		Sig. (2-tailed)	.743	.720	.588
		N	38	38	38
	Sienax 2.5 with inpainting normalized White Matter Volume	Correlation Coefficient	.154	.174	.100
		Sig. (2-tailed)	.357	.295	.550
		N	38	38	38
	Sienax 2.5 with inpainting normalized Lateral Ventricular Volume	Correlation Coefficient	-.172	.208	.029
		Sig. (2-tailed)	.301	.209	.865
		N	38	38	38
	Sienax 2.5 with inpainting normalized Neocortical Volume	Correlation Coefficient	.038	.070	.107
		Sig. (2-tailed)	.820	.676	.524
		N	38	38	38

. Correlation between conventional MRI measures in RRMS

Correlations

			CD31neg54pos	CD31neg51pos	CD31neg51pos_54pos
Spearman's rho	Volume of T1 hypointense lesions in cubic millimetres	Correlation Coefficient	.141	.358*	.127
		Sig. (2-tailed)	.417	.035	.466
		N	35	35	35
	Volume of GAD enhancing lesions in cubic millimetres	Correlation Coefficient	-.196	-.044	.103
		Sig. (2-tailed)	.259	.804	.556
		N	35	35	35
	Sienax 2.5 with inpainting normalized Brain Parenchymal Volume	Correlation Coefficient	.073	.239	.072
		Sig. (2-tailed)	.661	.149	.667
N		38	38	38	
Sienax 2.5 with inpainting normalized Grey Matter Volume	Correlation Coefficient	.302	.292	.123	
	Sig. (2-tailed)	.065	.075	.462	
	N	38	38	38	
Sienax 2.5 with inpainting normalized White Matter Volume	Correlation Coefficient	-.168	.024	-.022	
	Sig. (2-tailed)	.312	.885	.897	
	N	38	38	38	
Sienax 2.5 with inpainting normalized Lateral Ventricular Volume	Correlation Coefficient	-.060	.054	.011	
	Sig. (2-tailed)	.722	.749	.950	
	N	38	38	38	
Sienax 2.5 with inpainting normalized Neocortical Volume	Correlation Coefficient	.194	.366*	.148	
	Sig. (2-tailed)	.243	.024	.376	
	N	38	38	38	

*. Correlation is significant at the 0.05 level (2-tailed).

. Correlation between conventional MRI measures in RRMS

Correlations

			CD31neg54pos2	Volume of T2 hyperintense lesions in cubic millimetres	Volume of T1 hypointense lesions in cubic millimetres
Spearman's rho	Volume of T1 hypointense lesions in cubic millimetres	Correlation Coefficient	.047	.771**	1.000
		Sig. (2-tailed)	.790	.000	.
		N	35	35	35
	Volume of GAD enhancing lesions in cubic millimetres	Correlation Coefficient	-.059	.199	.127
		Sig. (2-tailed)	.737	.251	.466
		N	35	35	35
	Sienax 2.5 with inpainting normalized Brain Parenchymal Volume	Correlation Coefficient	-.072	-.275	-.191
Sig. (2-tailed)		.666	.095	.272	
N		38	38	35	
Sienax 2.5 with inpainting normalized Grey Matter Volume	Correlation Coefficient	-.003	.106	.088	
	Sig. (2-tailed)	.985	.527	.614	
	N	38	38	35	
Sienax 2.5 with inpainting normalized White Matter Volume	Correlation Coefficient	-.031	-.429**	-.421*	
	Sig. (2-tailed)	.853	.007	.012	
	N	38	38	35	
Sienax 2.5 with inpainting normalized Lateral Ventricular Volume	Correlation Coefficient	.084	.441**	.524**	
	Sig. (2-tailed)	.615	.006	.001	
	N	38	38	35	
Sienax 2.5 with inpainting normalized Neocortical Volume	Correlation Coefficient	.061	.023	.020	
	Sig. (2-tailed)	.716	.892	.909	
	N	38	38	35	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between conventional MRI measures in RRMS

Correlations

			Volume of GAD enhancing lesions in cubic millimetres	Siemax 2.5 with inpainting normalized Brain Parenchymal Volume	Siemax 2.5 with inpainting normalized Grey Matter Volume
Spearman's rho	Volume of T1 hypointense lesions in cubic millimetres	Correlation Coefficient	.127	-.191	.088
		Sig. (2-tailed)	.466	.272	.614
		N	35	35	35
	Volume of GAD enhancing lesions in cubic millimetres	Correlation Coefficient	1.000	.046	-.096
		Sig. (2-tailed)	.	.793	.585
		N	35	35	35
	Siemax 2.5 with inpainting normalized Brain Parenchymal Volume	Correlation Coefficient	.046	1.000	.631**
		Sig. (2-tailed)	.793	.	.000
N		35	38	38	
Siemax 2.5 with inpainting normalized Grey Matter Volume	Correlation Coefficient	-.096	.631**	1.000	
	Sig. (2-tailed)	.585	.000	.	
	N	35	38	38	
Siemax 2.5 with inpainting normalized White Matter Volume	Correlation Coefficient	.188	.632**	-.066	
	Sig. (2-tailed)	.280	.000	.695	
	N	35	38	38	
Siemax 2.5 with inpainting normalized Lateral Ventricular Volume	Correlation Coefficient	-.028	-.285	-.120	
	Sig. (2-tailed)	.872	.083	.473	
	N	35	38	38	
Siemax 2.5 with inpainting normalized Neocortical Volume	Correlation Coefficient	.025	.729**	.916**	
	Sig. (2-tailed)	.888	.000	.000	
	N	35	38	38	

** . Correlation is significant at the 0.01 level (2-tailed).

. Correlation between conventional MRI measures in RRMS

Correlations

			Sienax 2.5 with inpainting normalized White Matter Volume	Sienax 2.5 with inpainting normalized Lateral Ventricular Volume	Sienax 2.5 with inpainting normalized Neocortical Volume
Spearman's rho	Volume of T1 hypointense lesions in cubic millimetres	Correlation Coefficient	-.421 [*]	.524 ^{**}	.020
		Sig. (2-tailed)	.012	.001	.909
		N	35	35	35
	Volume of GAD enhancing lesions in cubic millimetres	Correlation Coefficient	.188	-.028	.025
		Sig. (2-tailed)	.280	.872	.888
		N	35	35	35
	Sienax 2.5 with inpainting normalized Brain Parenchymal Volume	Correlation Coefficient	.632 ^{**}	-.285	.729 ^{**}
		Sig. (2-tailed)	.000	.083	.000
N		38	38	38	
Sienax 2.5 with inpainting normalized Grey Matter Volume	Correlation Coefficient	-.066	-.120	.916 ^{**}	
	Sig. (2-tailed)	.695	.473	.000	
	N	38	38	38	
Sienax 2.5 with inpainting normalized White Matter Volume	Correlation Coefficient	1.000	-.460 ^{**}	.109	
	Sig. (2-tailed)	.	.004	.515	
	N	38	38	38	
Sienax 2.5 with inpainting normalized Lateral Ventricular Volume	Correlation Coefficient	-.460 ^{**}	1.000	-.103	
	Sig. (2-tailed)	.004	.	.537	
	N	38	38	38	
Sienax 2.5 with inpainting normalized Neocortical Volume	Correlation Coefficient	.109	-.103	1.000	
	Sig. (2-tailed)	.515	.537	.	
	N	38	38	38	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between conventional MRI measures in SPMS

Nonparametric Correlations

[DataSet1] C:\Users\rxz789\Documents\SPSS\VD-MRI project\CTEVD\Database\Phase I\LSU\Reduced sample size with CD31 data.sav

Correlations

			CD31pos	CD31pos51pos	CD31pos51pos_54pos
Spearman's rho	CD31pos	Correlation Coefficient	1.000	-.200	-.284
		Sig. (2-tailed)	.	.493	.326
		N	14	14	14
	CD31pos51pos	Correlation Coefficient	-.200	1.000	.512
		Sig. (2-tailed)	.493	.	.061
		N	14	14	14
	CD31pos51pos_54pos	Correlation Coefficient	-.284	.512	1.000
		Sig. (2-tailed)	.326	.061	.
		N	14	14	14
	CD31neg54pos	Correlation Coefficient	.055	-.169	.587*
		Sig. (2-tailed)	.852	.563	.027
		N	14	14	14
	CD31neg51pos	Correlation Coefficient	.055	.556*	.363
		Sig. (2-tailed)	.852	.039	.203
		N	14	14	14
	CD31neg51pos_54pos	Correlation Coefficient	-.503	.398	.451
		Sig. (2-tailed)	.067	.159	.106
		N	14	14	14
	CD31neg54pos2	Correlation Coefficient	-.270	.182	.565*
		Sig. (2-tailed)	.350	.533	.035
		N	14	14	14
	Volume of T2 hyperintense lesions in cubic millimetres	Correlation Coefficient	.068	-.015	-.064
		Sig. (2-tailed)	.817	.958	.829
		N	14	14	14

*. Correlation is significant at the 0.05 level (2-tailed).

. Correlation between conventional MRI measures in SPMS

Correlations

			CD31neg54pos	CD31neg51pos	CD31neg51pos_54pos
Spearman's rho	CD31pos	Correlation Coefficient	.055	.055	-.503
		Sig. (2-tailed)	.852	.852	.067
		N	14	14	14
	CD31pos51pos	Correlation Coefficient	-.169	.556*	.398
		Sig. (2-tailed)	.563	.039	.159
		N	14	14	14
	CD31pos51pos_54pos	Correlation Coefficient	.587*	.363	.451
		Sig. (2-tailed)	.027	.203	.106
		N	14	14	14
	CD31neg54pos	Correlation Coefficient	1.000	.182	.358
		Sig. (2-tailed)	.	.533	.208
		N	14	14	14
	CD31neg51pos	Correlation Coefficient	.182	1.000	.437
		Sig. (2-tailed)	.533	.	.118
		N	14	14	14
	CD31neg51pos_54pos	Correlation Coefficient	.358	.437	1.000
		Sig. (2-tailed)	.208	.118	.
		N	14	14	14
	CD31neg54pos2	Correlation Coefficient	.578*	.407	.815**
		Sig. (2-tailed)	.030	.149	.000
		N	14	14	14
	Volume of T2 hyperintense lesions in cubic millimetres	Correlation Coefficient	.090	.134	-.121
		Sig. (2-tailed)	.759	.648	.681
		N	14	14	14

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

. Correlation between conventional MRI measures in SPMS

Correlations

			CD31neg54pos2	Volume of T2 hyperintense lesions in cubic millimetres	Volume of T1 hypointense lesions in cubic millimetres
Spearman's rho	CD31pos	Correlation Coefficient	-.270	.068	.238
		Sig. (2-tailed)	.350	.817	.413
		N	14	14	14
	CD31pos51pos	Correlation Coefficient	.182	-.015	-.238
		Sig. (2-tailed)	.533	.958	.413
		N	14	14	14
	CD31pos51pos_54pos	Correlation Coefficient	.565*	-.064	-.132
		Sig. (2-tailed)	.035	.829	.653
		N	14	14	14
	CD31neg54pos	Correlation Coefficient	.578*	.090	.075
		Sig. (2-tailed)	.030	.759	.799
		N	14	14	14
	CD31neg51pos	Correlation Coefficient	.407	.134	.081
		Sig. (2-tailed)	.149	.648	.782
		N	14	14	14
	CD31neg51pos_54pos	Correlation Coefficient	.815**	-.121	-.359
		Sig. (2-tailed)	.000	.681	.208
		N	14	14	14
	CD31neg54pos2	Correlation Coefficient	1.000	-.156	-.242
		Sig. (2-tailed)	.	.594	.404
		N	14	14	14
	Volume of T2 hyperintense lesions in cubic millimetres	Correlation Coefficient	-.156	1.000	.884**
		Sig. (2-tailed)	.594	.	.000
		N	14	14	14

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

. Correlation between conventional MRI measures in SPMS

Correlations

			Volume of GAD enhancing lesions in cubic millimetres	Siemax 2.5 with inpainting normalized Brain Parenchymal Volume	Siemax 2.5 with inpainting normalized Grey Matter Volume
Spearman's rho	CD31pos	Correlation Coefficient	.	-.121	-.007
		Sig. (2-tailed)	.	.681	.982
		N	14	14	14
	CD31pos51pos	Correlation Coefficient	.	.262	.354
		Sig. (2-tailed)	.	.366	.215
		N	14	14	14
	CD31pos51pos_54pos	Correlation Coefficient	.	.178	.266
		Sig. (2-tailed)	.	.543	.358
		N	14	14	14
CD31neg54pos	Correlation Coefficient	.	-.152	-.055	
	Sig. (2-tailed)	.	.605	.852	
	N	14	14	14	
CD31neg51pos	Correlation Coefficient	.	.244	.327	
	Sig. (2-tailed)	.	.401	.253	
	N	14	14	14	
CD31neg51pos_54pos	Correlation Coefficient	.	.187	.262	
	Sig. (2-tailed)	.	.523	.366	
	N	14	14	14	
CD31neg54pos2	Correlation Coefficient	.	.077	.200	
	Sig. (2-tailed)	.	.794	.493	
	N	14	14	14	
Volume of T2 hyperintense lesions in cubic millimetres	Correlation Coefficient	.	-.341	-.481	
	Sig. (2-tailed)	.	.233	.081	
	N	14	14	14	

. Correlation between conventional MRI measures in SPMS

Correlations

			Siенax 2.5 with inpainting normalized White Matter Volume	Siенax 2.5 with inpainting normalized Lateral Ventricular Volume	Siенax 2.5 with inpainting normalized Neocortical Volume
Spearman's rho	CD31pos	Correlation Coefficient	-.121	.468	.086
		Sig. (2-tailed)	.681	.091	.771
		N	14	14	14
	CD31pos51pos	Correlation Coefficient	.204	-.411	.266
		Sig. (2-tailed)	.483	.144	.358
		N	14	14	14
	CD31pos51pos_54pos	Correlation Coefficient	-.196	-.473	.174
		Sig. (2-tailed)	.503	.088	.553
		N	14	14	14
CD31neg54pos	Correlation Coefficient	-.473	.029	-.160	
	Sig. (2-tailed)	.088	.923	.584	
	N	14	14	14	
CD31neg51pos	Correlation Coefficient	.116	.086	.257	
	Sig. (2-tailed)	.692	.771	.375	
	N	14	14	14	
CD31neg51pos_54pos	Correlation Coefficient	.143	-.429	.064	
	Sig. (2-tailed)	.626	.126	.829	
	N	14	14	14	
CD31neg54pos2	Correlation Coefficient	-.200	-.341	.051	
	Sig. (2-tailed)	.493	.233	.864	
	N	14	14	14	
Volume of T2 hyperintense lesions in cubic millimetres	Correlation Coefficient	-.046	.569 *	-.516	
	Sig. (2-tailed)	.876	.034	.059	
	N	14	14	14	

*. Correlation is significant at the 0.05 level (2-tailed).

. Correlation between conventional MRI measures in SPMS

Correlations

			CD31pos	CD31pos51pos	CD31pos51pos_54pos
Spearman's rho	Volume of T1 hypointense lesions in cubic millimetres	Correlation Coefficient	.238	-.238	-.132
		Sig. (2-tailed)	.413	.413	.653
		N	14	14	14
	Volume of GAD enhancing lesions in cubic millimetres	Correlation Coefficient	.	.	.
		Sig. (2-tailed)	.	.	.
		N	14	14	14
	Sienax 2.5 with inpainting normalized Brain Parenchymal Volume	Correlation Coefficient	-.121	.262	.178
		Sig. (2-tailed)	.681	.366	.543
N		14	14	14	
Sienax 2.5 with inpainting normalized Grey Matter Volume	Correlation Coefficient	-.007	.354	.266	
	Sig. (2-tailed)	.982	.215	.358	
	N	14	14	14	
Sienax 2.5 with inpainting normalized White Matter Volume	Correlation Coefficient	-.121	.204	-.196	
	Sig. (2-tailed)	.681	.483	.503	
	N	14	14	14	
Sienax 2.5 with inpainting normalized Lateral Ventricular Volume	Correlation Coefficient	.468	-.411	-.473	
	Sig. (2-tailed)	.091	.144	.088	
	N	14	14	14	
Sienax 2.5 with inpainting normalized Neocortical Volume	Correlation Coefficient	.086	.266	.174	
	Sig. (2-tailed)	.771	.358	.553	
	N	14	14	14	

. Correlation between conventional MRI measures in SPMS

Correlations

			CD31neg54pos	CD31neg51pos	CD31neg51pos_54pos
Spearman's rho	Volume of T1 hypointense lesions in cubic millimetres	Correlation Coefficient	.075	.081	-.359
		Sig. (2-tailed)	.799	.782	.208
		N	14	14	14
	Volume of GAD enhancing lesions in cubic millimetres	Correlation Coefficient	.	.	.
		Sig. (2-tailed)	.	.	.
		N	14	14	14
	Sienax 2.5 with inpainting normalized Brain Parenchymal Volume	Correlation Coefficient	-.152	.244	.187
		Sig. (2-tailed)	.605	.401	.523
N		14	14	14	
Sienax 2.5 with inpainting normalized Grey Matter Volume	Correlation Coefficient	-.055	.327	.262	
	Sig. (2-tailed)	.852	.253	.366	
	N	14	14	14	
Sienax 2.5 with inpainting normalized White Matter Volume	Correlation Coefficient	-.473	.116	.143	
	Sig. (2-tailed)	.088	.692	.626	
	N	14	14	14	
Sienax 2.5 with inpainting normalized Lateral Ventricular Volume	Correlation Coefficient	.029	.086	-.429	
	Sig. (2-tailed)	.923	.771	.126	
	N	14	14	14	
Sienax 2.5 with inpainting normalized Neocortical Volume	Correlation Coefficient	-.160	.257	.064	
	Sig. (2-tailed)	.584	.375	.829	
	N	14	14	14	

. Correlation between conventional MRI measures in SPMS

Correlations

			CD31neg54pos2	Volume of T2 hyperintense lesions in cubic millimetres	Volume of T1 hypointense lesions in cubic millimetres
Spearman's rho	Volume of T1 hypointense lesions in cubic millimetres	Correlation Coefficient	-.242	.884**	1.000
		Sig. (2-tailed)	.404	.000	.
		N	14	14	14
	Volume of GAD enhancing lesions in cubic millimetres	Correlation Coefficient	.	.	.
		Sig. (2-tailed)	.	.	.
		N	14	14	14
	Sienax 2.5 with inpainting normalized Brain Parenchymal Volume	Correlation Coefficient	.077	-.341	-.286
		Sig. (2-tailed)	.794	.233	.322
N		14	14	14	
Sienax 2.5 with inpainting normalized Grey Matter Volume	Correlation Coefficient	.200	-.481	-.396	
	Sig. (2-tailed)	.493	.081	.161	
	N	14	14	14	
Sienax 2.5 with inpainting normalized White Matter Volume	Correlation Coefficient	-.200	-.046	-.128	
	Sig. (2-tailed)	.493	.876	.664	
	N	14	14	14	
Sienax 2.5 with inpainting normalized Lateral Ventricular Volume	Correlation Coefficient	-.341	.569*	.722**	
	Sig. (2-tailed)	.233	.034	.004	
	N	14	14	14	
Sienax 2.5 with inpainting normalized Neocortical Volume	Correlation Coefficient	.051	-.516	-.422	
	Sig. (2-tailed)	.864	.059	.132	
	N	14	14	14	

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

. Correlation between conventional MRI measures in SPMS

Correlations

			Volume of GAD enhancing lesions in cubic millimetres	Siemax 2.5 with inpainting normalized Brain Parenchymal Volume	Siemax 2.5 with inpainting normalized Grey Matter Volume
Spearman's rho	Volume of T1 hypointense lesions in cubic millimetres	Correlation Coefficient	.	-.286	-.396
		Sig. (2-tailed)	.	.322	.161
		N	14	14	14
	Volume of GAD enhancing lesions in cubic millimetres	Correlation Coefficient	.	.	.
		Sig. (2-tailed)	.	.	.
		N	14	14	14
	Siemax 2.5 with inpainting normalized Brain Parenchymal Volume	Correlation Coefficient	.	1.000	.943**
		Sig. (2-tailed)	.	.	.000
N		14	14	14	
Siemax 2.5 with inpainting normalized Grey Matter Volume	Correlation Coefficient	.	.943**	1.000	
	Sig. (2-tailed)	.	.000	.	
	N	14	14	14	
Siemax 2.5 with inpainting normalized White Matter Volume	Correlation Coefficient	.	.749**	.596*	
	Sig. (2-tailed)	.	.002	.025	
	N	14	14	14	
Siemax 2.5 with inpainting normalized Lateral Ventricular Volume	Correlation Coefficient	.	-.543*	-.525	
	Sig. (2-tailed)	.	.045	.054	
	N	14	14	14	
Siemax 2.5 with inpainting normalized Neocortical Volume	Correlation Coefficient	.	.899**	.925**	
	Sig. (2-tailed)	.	.000	.000	
	N	14	14	14	

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

. Correlation between conventional MRI measures in SPMS

Correlations

			Siemax 2.5 with inpainting normalized White Matter Volume	Siemax 2.5 with inpainting normalized Lateral Ventricular Volume	Siemax 2.5 with inpainting normalized Neocortical Volume
Spearman's rho	Volume of T1 hypointense lesions in cubic millimetres	Correlation Coefficient	-.128	.722**	-.422
		Sig. (2-tailed)	.664	.004	.132
		N	14	14	14
	Volume of GAD enhancing lesions in cubic millimetres	Correlation Coefficient	.	.	.
		Sig. (2-tailed)	.	.	.
		N	14	14	14
	Siemax 2.5 with inpainting normalized Brain Parenchymal Volume	Correlation Coefficient	.749**	-.543*	.899**
		Sig. (2-tailed)	.002	.045	.000
N		14	14	14	
Siemax 2.5 with inpainting normalized Grey Matter Volume	Correlation Coefficient	.596*	-.525	.925**	
	Sig. (2-tailed)	.025	.054	.000	
	N	14	14	14	
Siemax 2.5 with inpainting normalized White Matter Volume	Correlation Coefficient	1.000	-.327	.609*	
	Sig. (2-tailed)	.	.253	.021	
	N	14	14	14	
Siemax 2.5 with inpainting normalized Lateral Ventricular Volume	Correlation Coefficient	-.327	1.000	-.459	
	Sig. (2-tailed)	.253	.	.098	
	N	14	14	14	
Siemax 2.5 with inpainting normalized Neocortical Volume	Correlation Coefficient	.609*	-.459	1.000	
	Sig. (2-tailed)	.021	.098	.	
	N	14	14	14	

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

. Correlation between iron MRI measures in all subjects

Nonparametric Correlations

[DataSet1] C:\Users\rxz789\Documents\SPSS\VD-MRI project\CTEVD\Database\Phase I\LSU\Reduced sample size with CD31 data.sav

Correlations

			dgm_tphase_ppb_mean	wm_tphase_ppb_mean	caudate_total_tphase_ppb_mean
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	1.000	.063	.596**
		Sig. (2-tailed)	.	.565	.000
		N	85	85	85
	wm_tphase_ppb_mean	Correlation Coefficient	.063	1.000	.122
		Sig. (2-tailed)	.565	.	.266
		N	85	85	85
	caudate_total_tphase_ppb_mean	Correlation Coefficient	.596**	.122	1.000
		Sig. (2-tailed)	.000	.266	.
		N	85	85	85
	putamen_total_tphase_ppb_mean	Correlation Coefficient	.852**	.076	.595**
		Sig. (2-tailed)	.000	.491	.000
		N	85	85	85
	globus_total_tphase_ppb_mean	Correlation Coefficient	.446**	.029	.310**
		Sig. (2-tailed)	.000	.791	.004
		N	85	85	85
	thal_total_tphase_ppb_mean	Correlation Coefficient	.396**	.004	.386**
		Sig. (2-tailed)	.000	.971	.000
		N	85	85	85
	hipp_total_tphase_ppb_mean	Correlation Coefficient	.372**	.045	.058
		Sig. (2-tailed)	.000	.681	.599
		N	85	85	85
	amyg_total_tphase_ppb_mean	Correlation Coefficient	.458**	-.063	.140
		Sig. (2-tailed)	.000	.570	.200

** . Correlation is significant at the 0.01 level (2-tailed).

. Correlation between iron MRI measures in all subjects

Correlations

			putamen_ total_tphase_ ppb_mean	globus_total_ tphase_ppb_ mean	thal_total_ tphase_ppb_ mean
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	.852**	.446**	.396**
		Sig. (2-tailed)	.000	.000	.000
		N	85	85	85
	wm_tphase_ppb_mean	Correlation Coefficient	.076	.029	.004
		Sig. (2-tailed)	.491	.791	.971
		N	85	85	85
	caudate_total_tphase_ ppb_mean	Correlation Coefficient	.595**	.310**	.386**
		Sig. (2-tailed)	.000	.004	.000
		N	85	85	85
	putamen_total_tphase_ ppb_mean	Correlation Coefficient	1.000	.314**	.312**
		Sig. (2-tailed)	.	.003	.004
		N	85	85	85
	globus_total_tphase_ppb_ mean	Correlation Coefficient	.314**	1.000	.187
		Sig. (2-tailed)	.003	.	.086
		N	85	85	85
	thal_total_tphase_ppb_ mean	Correlation Coefficient	.312**	.187	1.000
		Sig. (2-tailed)	.004	.086	.
		N	85	85	85
	hipp_total_tphase_ppb_ mean	Correlation Coefficient	.070	.216*	-.072
		Sig. (2-tailed)	.524	.047	.510
		N	85	85	85
	amyg_total_tphase_ppb_ mean	Correlation Coefficient	.272*	.136	-.021
		Sig. (2-tailed)	.012	.213	.847

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in all subjects

Correlations

			hipp_total_tphase_ppb_mean	amyg_total_tphase_ppb_mean	accu_total_tphase_ppb_mean
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	.372**	.458**	.521**
		Sig. (2-tailed)	.000	.000	.000
		N	85	85	73
	wm_tphase_ppb_mean	Correlation Coefficient	.045	-.063	.010
		Sig. (2-tailed)	.681	.570	.932
		N	85	85	73
	caudate_total_tphase_ppb_mean	Correlation Coefficient	.058	.140	.103
		Sig. (2-tailed)	.599	.200	.388
		N	85	85	73
	putamen_total_tphase_ppb_mean	Correlation Coefficient	.070	.272*	.449**
		Sig. (2-tailed)	.524	.012	.000
		N	85	85	73
	globus_total_tphase_ppb_mean	Correlation Coefficient	.216*	.136	-.008
		Sig. (2-tailed)	.047	.213	.944
		N	85	85	73
	thal_total_tphase_ppb_mean	Correlation Coefficient	-.072	-.021	-.109
		Sig. (2-tailed)	.510	.847	.357
		N	85	85	73
	hipp_total_tphase_ppb_mean	Correlation Coefficient	1.000	.485**	.119
		Sig. (2-tailed)	.	.000	.318
		N	85	85	73
	amyg_total_tphase_ppb_mean	Correlation Coefficient	.485**	1.000	.272*
		Sig. (2-tailed)	.000	.	.020

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in all subjects

Correlations

			rednuc_total_tphase_ppb_mean	subnig_total_tphase_ppb_mean	pulvinar_total_tphase_ppb_mean
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	.374**	.326**	.429**
		Sig. (2-tailed)	.001	.002	.000
		N	83	85	85
	wm_tphase_ppb_mean	Correlation Coefficient	.177	.002	-.019
		Sig. (2-tailed)	.109	.987	.866
		N	83	85	85
	caudate_total_tphase_ppb_mean	Correlation Coefficient	.433**	.281**	.295**
		Sig. (2-tailed)	.000	.009	.006
		N	83	85	85
	putamen_total_tphase_ppb_mean	Correlation Coefficient	.433**	.283**	.459**
		Sig. (2-tailed)	.000	.009	.000
		N	83	85	85
	globus_total_tphase_ppb_mean	Correlation Coefficient	.246*	.474**	.144
		Sig. (2-tailed)	.025	.000	.188
		N	83	85	85
	thal_total_tphase_ppb_mean	Correlation Coefficient	.134	.152	.634**
		Sig. (2-tailed)	.227	.166	.000
		N	83	85	85
	hipp_total_tphase_ppb_mean	Correlation Coefficient	-.006	.137	-.088
		Sig. (2-tailed)	.958	.211	.424
		N	83	85	85
	amyg_total_tphase_ppb_mean	Correlation Coefficient	.008	.164	.034
		Sig. (2-tailed)	.941	.134	.755

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in all subjects

Correlations

			CD31pos	CD31pos51pos	CD31pos51pos_54pos
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	.111	.152	.030
		Sig. (2-tailed)	.310	.165	.785
		N	85	85	85
	wm_tphase_ppb_mean	Correlation Coefficient	.086	.210	.276*
		Sig. (2-tailed)	.433	.053	.011
		N	85	85	85
	caudate_total_tphase_ppb_mean	Correlation Coefficient	.203	.081	.009
		Sig. (2-tailed)	.063	.463	.938
		N	85	85	85
	putamen_total_tphase_ppb_mean	Correlation Coefficient	.059	.153	.027
		Sig. (2-tailed)	.591	.162	.805
		N	85	85	85
	globus_total_tphase_ppb_mean	Correlation Coefficient	.069	.131	.022
		Sig. (2-tailed)	.532	.233	.839
		N	85	85	85
	thal_total_tphase_ppb_mean	Correlation Coefficient	.012	.213	.260*
		Sig. (2-tailed)	.916	.050	.016
		N	85	85	85
	hipp_total_tphase_ppb_mean	Correlation Coefficient	.062	-.043	.000
		Sig. (2-tailed)	.574	.697	.998
		N	85	85	85
	amyg_total_tphase_ppb_mean	Correlation Coefficient	.079	-.051	-.046
		Sig. (2-tailed)	.472	.642	.676

*. Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in all subjects

Correlations

			CD31neg54po s	CD31neg51po s
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	-.052	.241*
		Sig. (2-tailed)	.637	.026
		N	85	85
	wm_tphase_ppb_mean	Correlation Coefficient	-.028	-.015
		Sig. (2-tailed)	.802	.893
		N	85	85
	caudate_total_tphase_ppb_mean	Correlation Coefficient	-.068	.042
		Sig. (2-tailed)	.539	.703
		N	85	85
	putamen_total_tphase_ppb_mean	Correlation Coefficient	-.020	.258*
		Sig. (2-tailed)	.857	.017
		N	85	85
	globus_total_tphase_ppb_mean	Correlation Coefficient	-.056	.127
		Sig. (2-tailed)	.610	.245
		N	85	85
	thal_total_tphase_ppb_mean	Correlation Coefficient	.099	-.009
		Sig. (2-tailed)	.368	.936
		N	85	85
	hipp_total_tphase_ppb_mean	Correlation Coefficient	-.010	.131
		Sig. (2-tailed)	.925	.234
		N	85	85
	amyg_total_tphase_ppb_mean	Correlation Coefficient	-.053	.043
		Sig. (2-tailed)	.631	.699

*. Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in all subjects

Correlations

			CD31neg51pos_54pos	CD31neg54pos2
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	.075	.078
		Sig. (2-tailed)	.494	.480
		N	85	85
	wm_tphase_ppb_mean	Correlation Coefficient	.090	-.004
		Sig. (2-tailed)	.414	.968
		N	85	85
	caudate_total_tphase_ppb_mean	Correlation Coefficient	-.068	-.195
		Sig. (2-tailed)	.536	.074
		N	85	85
	putamen_total_tphase_ppb_mean	Correlation Coefficient	.066	.071
		Sig. (2-tailed)	.549	.520
		N	85	85
	globus_total_tphase_ppb_mean	Correlation Coefficient	.038	.093
		Sig. (2-tailed)	.727	.397
		N	85	85
	thal_total_tphase_ppb_mean	Correlation Coefficient	.099	-.062
		Sig. (2-tailed)	.365	.575
		N	85	85
	hipp_total_tphase_ppb_mean	Correlation Coefficient	.104	.099
		Sig. (2-tailed)	.345	.368
		N	85	85
	amyg_total_tphase_ppb_mean	Correlation Coefficient	-.027	.149
		Sig. (2-tailed)	.806	.174

. Correlation between iron MRI measures in all subjects

Correlations

			dgm_tphase_ ppb_mean	wm_tphase_ ppb_mean	caudate_ total_tphase_ ppb_mean
Spearman's rho	amyg_total_tphase_ppb_ mean	N	85	85	85
	accu_total_tphase_ppb_ mean	Correlation Coefficient	.521**	.010	.103
		Sig. (2-tailed)	.000	.932	.388
		N	73	73	73
	rednuc_total_tphase_ ppb_mean	Correlation Coefficient	.374**	.177	.433**
		Sig. (2-tailed)	.001	.109	.000
		N	83	83	83
	subnig_total_tphase_ppb_ mean	Correlation Coefficient	.326**	.002	.281**
		Sig. (2-tailed)	.002	.987	.009
		N	85	85	85
	pulvinar_total_tphase_ ppb_mean	Correlation Coefficient	.429**	-.019	.295**
		Sig. (2-tailed)	.000	.866	.006
		N	85	85	85
	CD31pos	Correlation Coefficient	.111	.086	.203
		Sig. (2-tailed)	.310	.433	.063
		N	85	85	85
	CD31pos51pos	Correlation Coefficient	.152	.210	.081
		Sig. (2-tailed)	.165	.053	.463
		N	85	85	85
	CD31pos51pos_54pos	Correlation Coefficient	.030	.276*	.009
	Sig. (2-tailed)	.785	.011	.938	
	N	85	85	85	
CD31neg54pos	Correlation Coefficient	-.052	-.028	-.068	
	Sig. (2-tailed)	.637	.802	.539	
	N	85	85	85	
CD31neg51pos	Correlation Coefficient	.241*	-.015	.042	
	Sig. (2-tailed)	.026	.893	.703	
	N	85	85	85	
CD31neg51pos_54pos	Correlation Coefficient	.075	.090	-.068	
	Sig. (2-tailed)	.494	.414	.536	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in all subjects

Correlations

			putamen_ total_tphase_ ppb_mean	globus_total_ tphase_ppb_ mean	thal_total_ tphase_ppb_ mean
Spearman's rho	amyg_total_tphase_ppb_ mean	N	85	85	85
	accu_total_tphase_ppb_ mean	Correlation Coefficient	.449**	-.008	-.109
		Sig. (2-tailed)	.000	.944	.357
		N	73	73	73
	rednuc_total_tphase_ ppb_mean	Correlation Coefficient	.433**	.246*	.134
		Sig. (2-tailed)	.000	.025	.227
		N	83	83	83
	subnig_total_tphase_ppb_ mean	Correlation Coefficient	.283**	.474**	.152
		Sig. (2-tailed)	.009	.000	.166
		N	85	85	85
	pulvinar_total_tphase_ ppb_mean	Correlation Coefficient	.459**	.144	.634**
		Sig. (2-tailed)	.000	.188	.000
		N	85	85	85
	CD31pos	Correlation Coefficient	.059	.069	.012
		Sig. (2-tailed)	.591	.532	.916
		N	85	85	85
	CD31pos51pos	Correlation Coefficient	.153	.131	.213
		Sig. (2-tailed)	.162	.233	.050
		N	85	85	85
	CD31pos51pos_54pos	Correlation Coefficient	.027	.022	.260*
	Sig. (2-tailed)	.805	.839	.016	
	N	85	85	85	
CD31neg54pos	Correlation Coefficient	-.020	-.056	.099	
	Sig. (2-tailed)	.857	.610	.368	
	N	85	85	85	
CD31neg51pos	Correlation Coefficient	.258*	.127	-.009	
	Sig. (2-tailed)	.017	.245	.936	
	N	85	85	85	
CD31neg51pos_54pos	Correlation Coefficient	.066	.038	.099	
	Sig. (2-tailed)	.549	.727	.365	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in all subjects

Correlations

			hipp_total_tphase_ppb_mean	amyg_total_tphase_ppb_mean	accu_total_tphase_ppb_mean
Spearman's rho	amyg_total_tphase_ppb_mean	N	85	85	73
	accu_total_tphase_ppb_mean	Correlation Coefficient	.119	.272*	1.000
		Sig. (2-tailed)	.318	.020	.
		N	73	73	73
	rednuc_total_tphase_ppb_mean	Correlation Coefficient	-.006	.008	.008
		Sig. (2-tailed)	.958	.941	.947
		N	83	83	71
	subnig_total_tphase_ppb_mean	Correlation Coefficient	.137	.164	-.022
		Sig. (2-tailed)	.211	.134	.850
		N	85	85	73
	pulvinar_total_tphase_ppb_mean	Correlation Coefficient	-.088	.034	-.049
		Sig. (2-tailed)	.424	.755	.682
		N	85	85	73
	CD31pos	Correlation Coefficient	.062	.079	.045
		Sig. (2-tailed)	.574	.472	.706
	N	85	85	73	
CD31pos51pos	Correlation Coefficient	-.043	-.051	.059	
	Sig. (2-tailed)	.697	.642	.619	
	N	85	85	73	
CD31pos51pos_54pos	Correlation Coefficient	.000	-.046	-.089	
	Sig. (2-tailed)	.998	.676	.453	
	N	85	85	73	
CD31neg54pos	Correlation Coefficient	-.010	-.053	-.120	
	Sig. (2-tailed)	.925	.631	.313	
	N	85	85	73	
CD31neg51pos	Correlation Coefficient	.131	.043	.089	
	Sig. (2-tailed)	.234	.699	.455	
	N	85	85	73	
CD31neg51pos_54pos	Correlation Coefficient	.104	-.027	.028	
	Sig. (2-tailed)	.345	.806	.817	

*. Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in all subjects

Correlations

			rednuc_total_tphase_ppb_mean	subnig_total_tphase_ppb_mean	pulvinar_total_tphase_ppb_mean
Spearman's rho	amyg_total_tphase_ppb_mean	N	83	85	85
	accu_total_tphase_ppb_mean	Correlation Coefficient	.008	-.022	-.049
		Sig. (2-tailed)	.947	.850	.682
		N	71	73	73
	rednuc_total_tphase_ppb_mean	Correlation Coefficient	1.000	.367**	.354**
		Sig. (2-tailed)	.	.001	.001
		N	83	83	83
	subnig_total_tphase_ppb_mean	Correlation Coefficient	.367**	1.000	.184
		Sig. (2-tailed)	.001	.	.092
		N	83	85	85
	pulvinar_total_tphase_ppb_mean	Correlation Coefficient	.354**	.184	1.000
		Sig. (2-tailed)	.001	.092	.
		N	83	85	85
	CD31pos	Correlation Coefficient	.158	.056	-.026
		Sig. (2-tailed)	.155	.608	.817
		N	83	85	85
	CD31pos51pos	Correlation Coefficient	.047	.202	.149
		Sig. (2-tailed)	.676	.064	.174
		N	83	85	85
	CD31pos51pos_54pos	Correlation Coefficient	.028	.120	.013
	Sig. (2-tailed)	.802	.275	.907	
	N	83	85	85	
CD31neg54pos	Correlation Coefficient	-.036	-.096	.044	
	Sig. (2-tailed)	.749	.383	.688	
	N	83	85	85	
CD31neg51pos	Correlation Coefficient	.143	.124	.119	
	Sig. (2-tailed)	.198	.260	.280	
	N	83	85	85	
CD31neg51pos_54pos	Correlation Coefficient	-.009	.079	.050	
	Sig. (2-tailed)	.939	.473	.649	

** . Correlation is significant at the 0.01 level (2-tailed).

. Correlation between iron MRI measures in all subjects

Correlations

			CD31pos	CD31pos51pos	CD31pos51pos_54pos
Spearman's rho	amyg_total_tphase_ppb_mean	N	85	85	85
	accu_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.045 .706 73	.059 .619 73	-.089 .453 73
	rednuc_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.158 .155 83	.047 .676 83	.028 .802 83
	subnig_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.056 .608 85	.202 .064 85	.120 .275 85
	pulvinar_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	-.026 .817 85	.149 .174 85	.013 .907 85
	CD31pos	Correlation Coefficient Sig. (2-tailed) N	1.000 85	-.013 .907 85	-.132 .228 85
	CD31pos51pos	Correlation Coefficient Sig. (2-tailed) N	-.013 .907 85	1.000 85	.490** .000 85
	CD31pos51pos_54pos	Correlation Coefficient Sig. (2-tailed) N	-.132 .228 85	.490** .000 85	1.000 85
	CD31neg54pos	Correlation Coefficient Sig. (2-tailed) N	-.018 .869 85	-.126 .251 85	.559** .000 85
	CD31neg51pos	Correlation Coefficient Sig. (2-tailed) N	.060 .584 85	.508** .000 85	.302** .005 85
	CD31neg51pos_54pos	Correlation Coefficient Sig. (2-tailed)	-.092 .403	.299** .005	.489** .000

** . Correlation is significant at the 0.01 level (2-tailed).

. Correlation between iron MRI measures in all subjects

Correlations

			CD31neg54pos	CD31neg51pos
Spearman's rho	amyg_total_tphase_ppb_mean	N	85	85
	accu_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	-.120 .313 73	.089 .455 73
	rednuc_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	-.036 .749 83	.143 .198 83
	subnig_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	-.096 .383 85	.124 .260 85
	pulvinar_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.044 .688 85	.119 .280 85
	CD31pos	Correlation Coefficient Sig. (2-tailed) N	-.018 .869 85	.060 .584 85
	CD31pos51pos	Correlation Coefficient Sig. (2-tailed) N	-.126 .251 85	.508** .000 85
	CD31pos51pos_54pos	Correlation Coefficient Sig. (2-tailed) N	.559** .000 85	.302** .005 85
	CD31neg54pos	Correlation Coefficient Sig. (2-tailed) N	1.000 .572 85	.062 .572 85
	CD31neg51pos	Correlation Coefficient Sig. (2-tailed) N	.062 .572 85	1.000 .572 85
	CD31neg51pos_54pos	Correlation Coefficient Sig. (2-tailed)	.177 .104	.394** .000

** . Correlation is significant at the 0.01 level (2-tailed).

. Correlation between iron MRI measures in all subjects

Correlations

			CD31neg51pos_54pos	CD31neg54pos2
Spearman's rho	amyg_total_tphase_ppb_mean	N	85	85
	accu_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.028 .817 73	.031 .793 73
	rednuc_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	-.009 .939 83	.094 .399 83
	subnig_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.079 .473 85	.001 .990 85
	pulvinar_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.050 .649 85	.090 .413 85
	CD31pos	Correlation Coefficient Sig. (2-tailed) N	-.092 .403 85	.010 .930 85
	CD31pos51pos	Correlation Coefficient Sig. (2-tailed) N	.299** .005 85	.071 .516 85
	CD31pos51pos_54pos	Correlation Coefficient Sig. (2-tailed) N	.489** .000 85	.132 .230 85
	CD31neg54pos	Correlation Coefficient Sig. (2-tailed) N	.177 .104 85	.212 .051 85
	CD31neg51pos	Correlation Coefficient Sig. (2-tailed) N	.394** .000 85	.325** .002 85
	CD31neg51pos_54pos	Correlation Coefficient Sig. (2-tailed)	1.000 .	.482** .000

** . Correlation is significant at the 0.01 level (2-tailed).

. Correlation between iron MRI measures in all subjects

Correlations

			dgm_tphase_ppb_mean	wm_tphase_ppb_mean	caudate_total_tphase_ppb_mean
Spearman's rho	CD31neg51pos_54pos	N	85	85	85
	CD31neg54pos2	Correlation Coefficient	.078	-.004	-.195
		Sig. (2-tailed)	.480	.968	.074
		N	85	85	85

Correlations

			putamen_total_tphase_ppb_mean	globus_total_tphase_ppb_mean	thal_total_tphase_ppb_mean
Spearman's rho	CD31neg51pos_54pos	N	85	85	85
	CD31neg54pos2	Correlation Coefficient	.071	.093	-.062
		Sig. (2-tailed)	.520	.397	.575
		N	85	85	85

Correlations

			hipp_total_tphase_ppb_mean	amyg_total_tphase_ppb_mean	accu_total_tphase_ppb_mean
Spearman's rho	CD31neg51pos_54pos	N	85	85	73
	CD31neg54pos2	Correlation Coefficient	.099	.149	.031
		Sig. (2-tailed)	.368	.174	.793
		N	85	85	73

. Correlation between iron MRI measures in all subjects

Correlations

			rednuc_total_tphase_ppb_mean	subnig_total_tphase_ppb_mean	pulvinar_total_tphase_ppb_mean
Spearman's rho	CD31neg51pos_54pos	N	83	85	85
	CD31neg54pos2	Correlation Coefficient	.094	.001	.090
		Sig. (2-tailed)	.399	.990	.413
		N	83	85	85

Correlations

			CD31pos	CD31pos51pos	CD31pos51pos_54pos
Spearman's rho	CD31neg51pos_54pos	N	85	85	85
	CD31neg54pos2	Correlation Coefficient	.010	.071	.132
		Sig. (2-tailed)	.930	.516	.230
		N	85	85	85

Correlations

			CD31neg54pos	CD31neg51pos
Spearman's rho	CD31neg51pos_54pos	N	85	85
	CD31neg54pos2	Correlation Coefficient	.212	.325**
		Sig. (2-tailed)	.051	.002
		N	85	85

** . Correlation is significant at the 0.01 level (2-tailed).

Correlations

			CD31neg51pos_54pos	CD31neg54pos2
Spearman's rho	CD31neg51pos_54pos	N	85	85
	CD31neg54pos2	Correlation Coefficient	.482**	1.000
		Sig. (2-tailed)	.000	.
		N	85	85

** . Correlation is significant at the 0.01 level (2-tailed).

. Correlation between iron MRI measures in HC

Nonparametric Correlations

[DataSet1] C:\Users\rxz789\Documents\SPSS\VD-MRI project\CTEVD\Database\Phase I\LSU\Reduced sample size with CD31 data.sav

Correlations

			dgm_tphase_ppb_mean	wm_tphase_ppb_mean	caudate_total_tphase_ppb_mean
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	1.000	-.108	.568**
		Sig. (2-tailed)		.549	.001
		N	33	33	33
	wm_tphase_ppb_mean	Correlation Coefficient	-.108	1.000	.125
		Sig. (2-tailed)	.549		.489
		N	33	33	33
	caudate_total_tphase_ppb_mean	Correlation Coefficient	.568**	.125	1.000
		Sig. (2-tailed)	.001	.489	
		N	33	33	33
	putamen_total_tphase_ppb_mean	Correlation Coefficient	.757**	-.158	.603**
		Sig. (2-tailed)	.000	.380	.000
		N	33	33	33
	globus_total_tphase_ppb_mean	Correlation Coefficient	.450**	-.018	.139
		Sig. (2-tailed)	.009	.921	.441
		N	33	33	33
	thal_total_tphase_ppb_mean	Correlation Coefficient	.546**	.170	.598**
		Sig. (2-tailed)	.001	.345	.000
		N	33	33	33
	hipp_total_tphase_ppb_mean	Correlation Coefficient	.551**	.113	.197
		Sig. (2-tailed)	.001	.531	.271
		N	33	33	33
	amyg_total_tphase_ppb_mean	Correlation Coefficient	.548**	-.033	.131
		Sig. (2-tailed)	.001	.855	.466
		N			

** . Correlation is significant at the 0.01 level (2-tailed).

. Correlation between iron MRI measures in HC

Correlations

			putamen_ total_tphase_ ppb_mean	globus_total_ tphase_ppb_ mean	thal_total_ tphase_ppb_ mean
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	.757**	.450**	.546**
		Sig. (2-tailed)	.000	.009	.001
		N	33	33	33
	wm_tphase_ppb_mean	Correlation Coefficient	-.158	-.018	.170
		Sig. (2-tailed)	.380	.921	.345
		N	33	33	33
	caudate_total_tphase_ ppb_mean	Correlation Coefficient	.603**	.139	.598**
		Sig. (2-tailed)	.000	.441	.000
		N	33	33	33
putamen_total_tphase_ ppb_mean	Correlation Coefficient	1.000	.255	.438*	
	Sig. (2-tailed)	.	.152	.011	
	N	33	33	33	
globus_total_tphase_ppb_ mean	Correlation Coefficient	.255	1.000	.092	
	Sig. (2-tailed)	.152	.	.610	
	N	33	33	33	
thal_total_tphase_ppb_ mean	Correlation Coefficient	.438*	.092	1.000	
	Sig. (2-tailed)	.011	.610	.	
	N	33	33	33	
hipp_total_tphase_ppb_ mean	Correlation Coefficient	.074	.436*	.286	
	Sig. (2-tailed)	.684	.011	.107	
	N	33	33	33	
amyg_total_tphase_ppb_ mean	Correlation Coefficient	.249	.152	.130	
	Sig. (2-tailed)	.163	.398	.472	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in HC

Correlations

			hipp_total_tphase_ppb_mean	amyg_total_tphase_ppb_mean	accu_total_tphase_ppb_mean
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	.551**	.548**	.512**
		Sig. (2-tailed)	.001	.001	.008
		N	33	33	26
	wm_tphase_ppb_mean	Correlation Coefficient	.113	-.033	-.186
		Sig. (2-tailed)	.531	.855	.362
		N	33	33	26
	caudate_total_tphase_ppb_mean	Correlation Coefficient	.197	.131	-.039
		Sig. (2-tailed)	.271	.466	.851
		N	33	33	26
putamen_total_tphase_ppb_mean	Correlation Coefficient	.074	.249	.512**	
	Sig. (2-tailed)	.684	.163	.007	
	N	33	33	26	
globus_total_tphase_ppb_mean	Correlation Coefficient	.436*	.152	.290	
	Sig. (2-tailed)	.011	.398	.150	
	N	33	33	26	
thal_total_tphase_ppb_mean	Correlation Coefficient	.286	.130	-.198	
	Sig. (2-tailed)	.107	.472	.332	
	N	33	33	26	
hipp_total_tphase_ppb_mean	Correlation Coefficient	1.000	.475**	.022	
	Sig. (2-tailed)	.	.005	.914	
	N	33	33	26	
amyg_total_tphase_ppb_mean	Correlation Coefficient	.475**	1.000	.187	
	Sig. (2-tailed)	.005	.	.360	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in HC

Correlations

			rednuc_total_tphase_ppb_mean	subnig_total_tphase_ppb_mean	pulvinar_total_tphase_ppb_mean
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	.631**	.546**	.612**
		Sig. (2-tailed)	.000	.001	.000
		N	33	33	33
	wm_tphase_ppb_mean	Correlation Coefficient	.009	-.050	.124
		Sig. (2-tailed)	.959	.782	.493
		N	33	33	33
	caudate_total_tphase_ppb_mean	Correlation Coefficient	.660**	.423*	.547**
		Sig. (2-tailed)	.000	.014	.001
		N	33	33	33
	putamen_total_tphase_ppb_mean	Correlation Coefficient	.525**	.470**	.568**
		Sig. (2-tailed)	.002	.006	.001
		N	33	33	33
	globus_total_tphase_ppb_mean	Correlation Coefficient	.191	.618**	.054
		Sig. (2-tailed)	.287	.000	.766
		N	33	33	33
	thal_total_tphase_ppb_mean	Correlation Coefficient	.308	.314	.707**
		Sig. (2-tailed)	.081	.075	.000
		N	33	33	33
	hipp_total_tphase_ppb_mean	Correlation Coefficient	.197	.274	.144
		Sig. (2-tailed)	.273	.123	.423
		N	33	33	33
	amyg_total_tphase_ppb_mean	Correlation Coefficient	.056	.135	.288
		Sig. (2-tailed)	.755	.455	.104

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in HC

Correlations

			CD31pos	CD31pos51pos	CD31pos51pos_54pos
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	-.086	-.145	-.018
		Sig. (2-tailed)	.635	.422	.919
		N	33	33	33
	wm_tphase_ppb_mean	Correlation Coefficient	.167	.168	.231
		Sig. (2-tailed)	.352	.350	.195
		N	33	33	33
	caudate_total_tphase_ppb_mean	Correlation Coefficient	.117	-.199	.067
		Sig. (2-tailed)	.517	.268	.712
		N	33	33	33
	putamen_total_tphase_ppb_mean	Correlation Coefficient	-.104	-.089	.075
		Sig. (2-tailed)	.565	.623	.679
		N	33	33	33
	globus_total_tphase_ppb_mean	Correlation Coefficient	-.035	.294	-.162
		Sig. (2-tailed)	.846	.097	.368
		N	33	33	33
	thal_total_tphase_ppb_mean	Correlation Coefficient	-.043	-.006	.348*
		Sig. (2-tailed)	.812	.972	.047
		N	33	33	33
	hipp_total_tphase_ppb_mean	Correlation Coefficient	.185	-.122	-.028
		Sig. (2-tailed)	.302	.498	.877
		N	33	33	33
	amyg_total_tphase_ppb_mean	Correlation Coefficient	.010	-.184	-.107
		Sig. (2-tailed)	.957	.304	.552

*. Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in HC

Correlations

			CD31neg54po s	CD31neg51po s
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	-.138	.051
		Sig. (2-tailed)	.443	.778
		N	33	33
	wm_tphase_ppb_mean	Correlation Coefficient	-.127	-.242
		Sig. (2-tailed)	.481	.174
		N	33	33
	caudate_total_tphase_ppb_mean	Correlation Coefficient	.118	-.208
		Sig. (2-tailed)	.512	.245
		N	33	33
	putamen_total_tphase_ppb_mean	Correlation Coefficient	.006	.140
		Sig. (2-tailed)	.975	.438
		N	33	33
	globus_total_tphase_ppb_mean	Correlation Coefficient	-.530**	.149
		Sig. (2-tailed)	.002	.408
		N	33	33
	thal_total_tphase_ppb_mean	Correlation Coefficient	.219	-.186
		Sig. (2-tailed)	.220	.299
		N	33	33
	hipp_total_tphase_ppb_mean	Correlation Coefficient	-.150	.035
		Sig. (2-tailed)	.403	.848
		N	33	33
	amyg_total_tphase_ppb_mean	Correlation Coefficient	-.098	-.001
		Sig. (2-tailed)	.588	.998

** . Correlation is significant at the 0.01 level (2-tailed).

. Correlation between iron MRI measures in HC

Correlations

			CD31neg51pos_54pos	CD31neg54pos2
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	.077	.285
		Sig. (2-tailed)	.670	.108
		N	33	33
	wm_tphase_ppb_mean	Correlation Coefficient	-.002	-.096
		Sig. (2-tailed)	.990	.595
		N	33	33
	caudate_total_tphase_ppb_mean	Correlation Coefficient	-.009	-.011
		Sig. (2-tailed)	.961	.951
		N	33	33
	putamen_total_tphase_ppb_mean	Correlation Coefficient	.121	.303
		Sig. (2-tailed)	.502	.087
		N	33	33
	globus_total_tphase_ppb_mean	Correlation Coefficient	.100	-.106
		Sig. (2-tailed)	.579	.559
		N	33	33
	thal_total_tphase_ppb_mean	Correlation Coefficient	.072	.040
		Sig. (2-tailed)	.690	.823
		N	33	33
	hipp_total_tphase_ppb_mean	Correlation Coefficient	.106	.109
		Sig. (2-tailed)	.558	.545
		N	33	33
	amyg_total_tphase_ppb_mean	Correlation Coefficient	-.136	.223
		Sig. (2-tailed)	.452	.213

. Correlation between iron MRI measures in HC

Correlations

			dgm_tphase_ ppb_mean	wm_tphase_ ppb_mean	caudate_ total_tphase_ ppb_mean
Spearman's rho	amyg_total_tphase_ppb_ mean	N	33	33	33
	accu_total_tphase_ppb_ mean	Correlation Coefficient	.512**	-.186	-.039
		Sig. (2-tailed)	.008	.362	.851
		N	26	26	26
	rednuc_total_tphase_ ppb_mean	Correlation Coefficient	.631**	.009	.660**
		Sig. (2-tailed)	.000	.959	.000
		N	33	33	33
	subnig_total_tphase_ppb_ mean	Correlation Coefficient	.546**	-.050	.423*
		Sig. (2-tailed)	.001	.782	.014
		N	33	33	33
	pulvinar_total_tphase_ ppb_mean	Correlation Coefficient	.612**	.124	.547**
		Sig. (2-tailed)	.000	.493	.001
		N	33	33	33
	CD31pos	Correlation Coefficient	-.086	.167	.117
		Sig. (2-tailed)	.635	.352	.517
		N	33	33	33
	CD31pos51pos	Correlation Coefficient	-.145	.168	-.199
		Sig. (2-tailed)	.422	.350	.268
		N	33	33	33
	CD31pos51pos_54pos	Correlation Coefficient	-.018	.231	.067
	Sig. (2-tailed)	.919	.195	.712	
	N	33	33	33	
CD31neg54pos	Correlation Coefficient	-.138	-.127	.118	
	Sig. (2-tailed)	.443	.481	.512	
	N	33	33	33	
CD31neg51pos	Correlation Coefficient	.051	-.242	-.208	
	Sig. (2-tailed)	.778	.174	.245	
	N	33	33	33	
CD31neg51pos_54pos	Correlation Coefficient	.077	-.002	-.009	
	Sig. (2-tailed)	.670	.990	.961	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in HC

Correlations

			putamen_ total_tphase_ ppb_mean	globus_total_ tphase_ppb_ mean	thal_total_ tphase_ppb_ mean
Spearman's rho	amyg_total_tphase_ppb_ mean	N	33	33	33
	accu_total_tphase_ppb_ mean	Correlation Coefficient Sig. (2-tailed) N	.512** .007 26	.290 .150 26	-.198 .332 26
	rednuc_total_tphase_ ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.525** .002 33	.191 .287 33	.308 .081 33
	subnig_total_tphase_ppb_ mean	Correlation Coefficient Sig. (2-tailed) N	.470** .006 33	.618** .000 33	.314 .075 33
	pulvinar_total_tphase_ ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.568** .001 33	.054 .766 33	.707** .000 33
	CD31pos	Correlation Coefficient Sig. (2-tailed) N	-.104 .565 33	-.035 .846 33	-.043 .812 33
	CD31pos51pos	Correlation Coefficient Sig. (2-tailed) N	-.089 .623 33	.294 .097 33	-.006 .972 33
	CD31pos51pos_54pos	Correlation Coefficient Sig. (2-tailed) N	.075 .679 33	-.162 .368 33	.348* .047 33
	CD31neg54pos	Correlation Coefficient Sig. (2-tailed) N	.006 .975 33	-.530** .002 33	.219 .220 33
	CD31neg51pos	Correlation Coefficient Sig. (2-tailed) N	.140 .438 33	.149 .408 33	-.186 .299 33
	CD31neg51pos_54pos	Correlation Coefficient Sig. (2-tailed)	.121 .502	.100 .579	.072 .690

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in HC

Correlations

			hipp_total_tphase_ppb_mean	amyg_total_tphase_ppb_mean	accu_total_tphase_ppb_mean
Spearman's rho	amyg_total_tphase_ppb_mean	N	33	33	26
	accu_total_tphase_ppb_mean	Correlation Coefficient	.022	.187	1.000
		Sig. (2-tailed)	.914	.360	
		N	26	26	26
	rednuc_total_tphase_ppb_mean	Correlation Coefficient	.197	.056	.437*
		Sig. (2-tailed)	.273	.755	.026
		N	33	33	26
	subnig_total_tphase_ppb_mean	Correlation Coefficient	.274	.135	.111
		Sig. (2-tailed)	.123	.455	.589
		N	33	33	26
	pulvinar_total_tphase_ppb_mean	Correlation Coefficient	.144	.288	.117
		Sig. (2-tailed)	.423	.104	.568
		N	33	33	26
	CD31pos	Correlation Coefficient	.185	.010	-.245
		Sig. (2-tailed)	.302	.957	.227
		N	33	33	26
	CD31pos51pos	Correlation Coefficient	-.122	-.184	-.150
		Sig. (2-tailed)	.498	.304	.464
		N	33	33	26
	CD31pos51pos_54pos	Correlation Coefficient	-.028	-.107	-.264
	Sig. (2-tailed)	.877	.552	.193	
	N	33	33	26	
CD31neg54pos	Correlation Coefficient	-.150	-.098	-.252	
	Sig. (2-tailed)	.403	.588	.214	
	N	33	33	26	
CD31neg51pos	Correlation Coefficient	.035	-.001	.054	
	Sig. (2-tailed)	.848	.998	.792	
	N	33	33	26	
CD31neg51pos_54pos	Correlation Coefficient	.106	-.136	-.077	
	Sig. (2-tailed)	.558	.452	.708	

*. Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in HC

Correlations

			rednuc_total_tphase_ppb_mean	subnig_total_tphase_ppb_mean	pulvinar_total_tphase_ppb_mean
Spearman's rho	amyg_total_tphase_ppb_mean	N	33	33	33
	accu_total_tphase_ppb_mean	Correlation Coefficient	.437*	.111	.117
		Sig. (2-tailed)	.026	.589	.568
		N	26	26	26
	rednuc_total_tphase_ppb_mean	Correlation Coefficient	1.000	.423*	.472**
		Sig. (2-tailed)	.	.014	.006
		N	33	33	33
	subnig_total_tphase_ppb_mean	Correlation Coefficient	.423*	1.000	.296
		Sig. (2-tailed)	.014	.	.094
		N	33	33	33
	pulvinar_total_tphase_ppb_mean	Correlation Coefficient	.472**	.296	1.000
		Sig. (2-tailed)	.006	.094	.
		N	33	33	33
	CD31pos	Correlation Coefficient	-.096	-.020	-.162
		Sig. (2-tailed)	.594	.910	.368
	N	33	33	33	
CD31pos51pos	Correlation Coefficient	-.226	.258	-.262	
	Sig. (2-tailed)	.206	.147	.141	
	N	33	33	33	
CD31pos51pos_54pos	Correlation Coefficient	-.155	.027	-.012	
	Sig. (2-tailed)	.388	.883	.947	
	N	33	33	33	
CD31neg54pos	Correlation Coefficient	-.099	-.303	.117	
	Sig. (2-tailed)	.584	.086	.516	
	N	33	33	33	
CD31neg51pos	Correlation Coefficient	-.097	.233	-.152	
	Sig. (2-tailed)	.592	.193	.400	
	N	33	33	33	
CD31neg51pos_54pos	Correlation Coefficient	.019	.123	-.008	
	Sig. (2-tailed)	.918	.495	.964	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in HC

Correlations

			CD31pos	CD31pos51pos	CD31pos51pos_54pos
Spearman's rho	amyg_total_tphase_ppb_mean	N	33	33	33
	accu_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	-.245 .227 26	-.150 .464 26	-.264 .193 26
	rednuc_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	-.096 .594 33	-.226 .206 33	-.155 .388 33
	subnig_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	-.020 .910 33	.258 .147 33	.027 .883 33
	pulvinar_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	-.162 .368 33	-.262 .141 33	-.012 .947 33
	CD31pos	Correlation Coefficient Sig. (2-tailed) N	1.000 33	-.019 .916 33	-.243 .173 33
	CD31pos51pos	Correlation Coefficient Sig. (2-tailed) N	-.019 .916 33	1.000 33	.353* .044 33
	CD31pos51pos_54pos	Correlation Coefficient Sig. (2-tailed) N	-.243 .173 33	.353* .044 33	1.000 33
	CD31neg54pos	Correlation Coefficient Sig. (2-tailed) N	-.220 .219 33	-.317 .072 33	.563** .001 33
	CD31neg51pos	Correlation Coefficient Sig. (2-tailed) N	-.046 .798 33	.394* .023 33	.181 .313 33
	CD31neg51pos_54pos	Correlation Coefficient Sig. (2-tailed)	-.091 .613	.268 .132	.294 .097

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in HC

Correlations

			CD31neg54pos	CD31neg51pos
Spearman's rho	amyg_total_tphase_ppb_mean	N	33	33
	accu_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	-.252 .214 26	.054 .792 26
	rednuc_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	-.099 .584 33	-.097 .592 33
	subnig_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	-.303 .086 33	.233 .193 33
	pulvinar_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.117 .516 33	-.152 .400 33
	CD31pos	Correlation Coefficient Sig. (2-tailed) N	-.220 .219 33	-.046 .798 33
	CD31pos51pos	Correlation Coefficient Sig. (2-tailed) N	-.317 .072 33	.394* .023 33
	CD31pos51pos_54pos	Correlation Coefficient Sig. (2-tailed) N	.563** .001 33	.181 .313 33
	CD31neg54pos	Correlation Coefficient Sig. (2-tailed) N	1.000 .756 33	-.056 .756 33
	CD31neg51pos	Correlation Coefficient Sig. (2-tailed) N	-.056 .756 33	1.000 .756 33
	CD31neg51pos_54pos	Correlation Coefficient Sig. (2-tailed)	-.097 .591	.320 .069

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in HC

Correlations

			CD31neg51pos_54pos	CD31neg54pos2
Spearman's rho	amyg_total_tphase_ppb_mean	N	33	33
	accu_total_tphase_ppb_mean	Correlation Coefficient	-.077	.143
		Sig. (2-tailed)	.708	.485
		N	26	26
	rednuc_total_tphase_ppb_mean	Correlation Coefficient	.019	.030
		Sig. (2-tailed)	.918	.867
		N	33	33
	subnig_total_tphase_ppb_mean	Correlation Coefficient	.123	.094
		Sig. (2-tailed)	.495	.602
		N	33	33
	pulvinar_total_tphase_ppb_mean	Correlation Coefficient	-.008	.297
		Sig. (2-tailed)	.964	.093
		N	33	33
	CD31pos	Correlation Coefficient	-.091	-.162
		Sig. (2-tailed)	.613	.366
		N	33	33
CD31pos51pos	Correlation Coefficient	.268	.119	
	Sig. (2-tailed)	.132	.510	
	N	33	33	
CD31pos51pos_54pos	Correlation Coefficient	.294	.007	
	Sig. (2-tailed)	.097	.971	
	N	33	33	
CD31neg54pos	Correlation Coefficient	-.097	-.094	
	Sig. (2-tailed)	.591	.604	
	N	33	33	
CD31neg51pos	Correlation Coefficient	.320	.368*	
	Sig. (2-tailed)	.069	.035	
	N	33	33	
CD31neg51pos_54pos	Correlation Coefficient	1.000	.536**	
	Sig. (2-tailed)	.	.001	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in HC

Correlations

			dgm_tphase_ppb_mean	wm_tphase_ppb_mean	caudate_total_tphase_ppb_mean
Spearman's rho	CD31neg51pos_54pos	N	33	33	33
	CD31neg54pos2	Correlation Coefficient	.285	-.096	-.011
		Sig. (2-tailed)	.108	.595	.951
		N	33	33	33

Correlations

			putamen_total_tphase_ppb_mean	globus_total_tphase_ppb_mean	thal_total_tphase_ppb_mean
Spearman's rho	CD31neg51pos_54pos	N	33	33	33
	CD31neg54pos2	Correlation Coefficient	.303	-.106	.040
		Sig. (2-tailed)	.087	.559	.823
		N	33	33	33

Correlations

			hipp_total_tphase_ppb_mean	amyg_total_tphase_ppb_mean	accu_total_tphase_ppb_mean
Spearman's rho	CD31neg51pos_54pos	N	33	33	26
	CD31neg54pos2	Correlation Coefficient	.109	.223	.143
		Sig. (2-tailed)	.545	.213	.485
		N	33	33	26

. Correlation between iron MRI measures in HC

Correlations

			rednuc_total_tphase_ppb_mean	subnig_total_tphase_ppb_mean	pulvinar_total_tphase_ppb_mean
Spearman's rho	CD31neg51pos_54pos	N	33	33	33
	CD31neg54pos2	Correlation Coefficient	.030	.094	.297
		Sig. (2-tailed)	.867	.602	.093
		N	33	33	33

Correlations

			CD31pos	CD31pos51pos	CD31pos51pos_54pos
Spearman's rho	CD31neg51pos_54pos	N	33	33	33
	CD31neg54pos2	Correlation Coefficient	-.162	.119	.007
		Sig. (2-tailed)	.366	.510	.971
		N	33	33	33

Correlations

			CD31neg54pos	CD31neg51pos
Spearman's rho	CD31neg51pos_54pos	N	33	33
	CD31neg54pos2	Correlation Coefficient	-.094	.368*
		Sig. (2-tailed)	.604	.035
		N	33	33

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

			CD31neg51pos_54pos	CD31neg54pos2
Spearman's rho	CD31neg51pos_54pos	N	33	33
	CD31neg54pos2	Correlation Coefficient	.536**	1.000
		Sig. (2-tailed)	.001	.
		N	33	33

** . Correlation is significant at the 0.01 level (2-tailed).

. Correlation between iron MRI measures in MS

Nonparametric Correlations

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Correlations

			dgm_tphase_ppb_mean	wm_tphase_ppb_mean	caudate_total_tphase_ppb_mean
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	1.000	.220	.553**
		Sig. (2-tailed)	.	.117	.000
		N	52	52	52
	wm_tphase_ppb_mean	Correlation Coefficient	.220	1.000	.163
		Sig. (2-tailed)	.117	.	.247
		N	52	52	52
	caudate_total_tphase_ppb_mean	Correlation Coefficient	.553**	.163	1.000
		Sig. (2-tailed)	.000	.247	.
		N	52	52	52
	putamen_total_tphase_ppb_mean	Correlation Coefficient	.857**	.310*	.514**
		Sig. (2-tailed)	.000	.025	.000
		N	52	52	52
	globus_total_tphase_ppb_mean	Correlation Coefficient	.408**	.075	.399**
		Sig. (2-tailed)	.003	.596	.003
		N	52	52	52
	thal_total_tphase_ppb_mean	Correlation Coefficient	.288*	-.140	.228
		Sig. (2-tailed)	.039	.323	.104
		N	52	52	52
	hipp_total_tphase_ppb_mean	Correlation Coefficient	.294*	.018	.010
		Sig. (2-tailed)	.034	.899	.943
		N	52	52	52
	amyg_total_tphase_ppb_mean	Correlation Coefficient	.366**	-.063	.143
		Sig. (2-tailed)	.008	.659	.310
		N	52	52	52

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in MS

Correlations

			putamen_ total_tphase_ ppb_mean	globus_total_ tphase_ppb_ mean	thal_total_ tphase_ppb_ mean
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	.857**	.408**	.288*
		Sig. (2-tailed)	.000	.003	.039
		N	52	52	52
	wm_tphase_ppb_mean	Correlation Coefficient	.310*	.075	-.140
		Sig. (2-tailed)	.025	.596	.323
		N	52	52	52
	caudate_total_tphase_ ppb_mean	Correlation Coefficient	.514**	.399**	.228
		Sig. (2-tailed)	.000	.003	.104
		N	52	52	52
	putamen_total_tphase_ ppb_mean	Correlation Coefficient	1.000	.328*	.204
		Sig. (2-tailed)	.	.018	.148
		N	52	52	52
	globus_total_tphase_ppb_ mean	Correlation Coefficient	.328*	1.000	.221
		Sig. (2-tailed)	.018	.	.115
		N	52	52	52
	thal_total_tphase_ppb_ mean	Correlation Coefficient	.204	.221	1.000
		Sig. (2-tailed)	.148	.115	.
		N	52	52	52
	hipp_total_tphase_ppb_ mean	Correlation Coefficient	.069	.073	-.332*
		Sig. (2-tailed)	.628	.609	.016
		N	52	52	52
	amyg_total_tphase_ppb_ mean	Correlation Coefficient	.214	.085	-.159
		Sig. (2-tailed)	.127	.549	.262

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in MS

Correlations

			hipp_total_tphase_ppb_mean	amyg_total_tphase_ppb_mean	accu_total_tphase_ppb_mean
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	.294*	.366**	.539**
		Sig. (2-tailed)	.034	.008	.000
		N	52	52	47
	wm_tphase_ppb_mean	Correlation Coefficient	.018	-.063	.121
		Sig. (2-tailed)	.899	.659	.418
		N	52	52	47
	caudate_total_tphase_ppb_mean	Correlation Coefficient	.010	.143	.148
		Sig. (2-tailed)	.943	.310	.321
		N	52	52	47
	putamen_total_tphase_ppb_mean	Correlation Coefficient	.069	.214	.424**
		Sig. (2-tailed)	.628	.127	.003
		N	52	52	47
	globus_total_tphase_ppb_mean	Correlation Coefficient	.073	.085	-.158
		Sig. (2-tailed)	.609	.549	.288
		N	52	52	47
	thal_total_tphase_ppb_mean	Correlation Coefficient	-.332*	-.159	-.073
		Sig. (2-tailed)	.016	.262	.624
		N	52	52	47
	hipp_total_tphase_ppb_mean	Correlation Coefficient	1.000	.478**	.152
		Sig. (2-tailed)	.	.000	.308
		N	52	52	47
	amyg_total_tphase_ppb_mean	Correlation Coefficient	.478**	1.000	.296*
		Sig. (2-tailed)	.000	.	.043

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in MS

Correlations

			rednuc_total_tphase_ppb_mean	subnig_total_tphase_ppb_mean	pulvinar_total_tphase_ppb_mean
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	.197	.178	.218
		Sig. (2-tailed)	.171	.207	.121
		N	50	52	52
	wm_tphase_ppb_mean	Correlation Coefficient	.316*	.045	-.075
		Sig. (2-tailed)	.025	.751	.599
		N	50	52	52
	caudate_total_tphase_ppb_mean	Correlation Coefficient	.336*	.272	.081
		Sig. (2-tailed)	.017	.051	.567
		N	50	52	52
	putamen_total_tphase_ppb_mean	Correlation Coefficient	.324*	.151	.312*
		Sig. (2-tailed)	.022	.285	.024
		N	50	52	52
	globus_total_tphase_ppb_mean	Correlation Coefficient	.279*	.359**	.177
		Sig. (2-tailed)	.049	.009	.208
		N	50	52	52
	thal_total_tphase_ppb_mean	Correlation Coefficient	-.006	.040	.551**
		Sig. (2-tailed)	.969	.780	.000
		N	50	52	52
	hipp_total_tphase_ppb_mean	Correlation Coefficient	-.104	.046	-.234
		Sig. (2-tailed)	.471	.748	.095
		N	50	52	52
	amyg_total_tphase_ppb_mean	Correlation Coefficient	.013	.164	-.135
		Sig. (2-tailed)	.929	.246	.339

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in MS

Correlations

			CD31pos	CD31pos51pos	CD31pos51pos_54pos
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	.193	.255	.121
		Sig. (2-tailed)	.170	.068	.391
		N	52	52	52
	wm_tphase_ppb_mean	Correlation Coefficient	.029	.225	.292*
		Sig. (2-tailed)	.839	.108	.036
		N	52	52	52
	caudate_total_tphase_ppb_mean	Correlation Coefficient	.167	.108	.079
		Sig. (2-tailed)	.237	.445	.577
		N	52	52	52
	putamen_total_tphase_ppb_mean	Correlation Coefficient	.108	.270	.100
		Sig. (2-tailed)	.445	.053	.479
		N	52	52	52
	globus_total_tphase_ppb_mean	Correlation Coefficient	.135	.017	.120
		Sig. (2-tailed)	.341	.905	.396
		N	52	52	52
	thal_total_tphase_ppb_mean	Correlation Coefficient	-.003	.305*	.212
		Sig. (2-tailed)	.981	.028	.131
		N	52	52	52
	hipp_total_tphase_ppb_mean	Correlation Coefficient	-.008	-.021	.019
		Sig. (2-tailed)	.955	.880	.896
		N	52	52	52
	amyg_total_tphase_ppb_mean	Correlation Coefficient	.176	.013	.018
		Sig. (2-tailed)	.212	.928	.901
		N	52	52	52

*. Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in MS

Correlations

			CD31neg54po s	CD31neg51po s
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	.024	.268
		Sig. (2-tailed)	.864	.054
		N	52	52
	wm_tphase_ppb_mean	Correlation Coefficient	.014	.126
		Sig. (2-tailed)	.921	.373
		N	52	52
	caudate_total_tphase_ppb_mean	Correlation Coefficient	-.118	.034
		Sig. (2-tailed)	.404	.809
		N	52	52
	putamen_total_tphase_ppb_mean	Correlation Coefficient	-.019	.299*
		Sig. (2-tailed)	.894	.031
		N	52	52
	globus_total_tphase_ppb_mean	Correlation Coefficient	.238	.071
		Sig. (2-tailed)	.089	.617
		N	52	52
	thal_total_tphase_ppb_mean	Correlation Coefficient	.039	.078
		Sig. (2-tailed)	.785	.584
		N	52	52
	hipp_total_tphase_ppb_mean	Correlation Coefficient	.091	.163
		Sig. (2-tailed)	.522	.249
		N	52	52
	amyg_total_tphase_ppb_mean	Correlation Coefficient	-.012	.032
		Sig. (2-tailed)	.934	.822

*. Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in MS

Correlations

			CD31neg51pos_54pos	CD31neg54pos2
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	.159	-.012
		Sig. (2-tailed)	.261	.931
		N	52	52
	wm_tphase_ppb_mean	Correlation Coefficient	.145	.060
		Sig. (2-tailed)	.304	.674
		N	52	52
	caudate_total_tphase_ppb_mean	Correlation Coefficient	-.057	-.304*
		Sig. (2-tailed)	.687	.028
		N	52	52
	putamen_total_tphase_ppb_mean	Correlation Coefficient	.128	-.027
		Sig. (2-tailed)	.366	.848
		N	52	52
	globus_total_tphase_ppb_mean	Correlation Coefficient	.022	.238
		Sig. (2-tailed)	.879	.090
		N	52	52
	thal_total_tphase_ppb_mean	Correlation Coefficient	.154	-.110
		Sig. (2-tailed)	.276	.437
		N	52	52
	hipp_total_tphase_ppb_mean	Correlation Coefficient	.126	.110
		Sig. (2-tailed)	.374	.436
		N	52	52
	amyg_total_tphase_ppb_mean	Correlation Coefficient	.051	.093
		Sig. (2-tailed)	.717	.514

*. Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in MS

Correlations

			dgm_tphase_ ppb_mean	wm_tphase_ ppb_mean	caudate_ total_tphase_ ppb_mean
Spearman's rho	amyg_total_tphase_ppb_ mean	N	52	52	52
	accu_total_tphase_ppb_ mean	Correlation Coefficient	.539**	.121	.148
		Sig. (2-tailed)	.000	.418	.321
		N	47	47	47
	rednuc_total_tphase_ ppb_mean	Correlation Coefficient	.197	.316*	.336*
		Sig. (2-tailed)	.171	.025	.017
		N	50	50	50
	subnig_total_tphase_ppb_ mean	Correlation Coefficient	.178	.045	.272
		Sig. (2-tailed)	.207	.751	.051
		N	52	52	52
	pulvinar_total_tphase_ ppb_mean	Correlation Coefficient	.218	-.075	.081
		Sig. (2-tailed)	.121	.599	.567
		N	52	52	52
	CD31pos	Correlation Coefficient	.193	.029	.167
		Sig. (2-tailed)	.170	.839	.237
		N	52	52	52
	CD31pos51pos	Correlation Coefficient	.255	.225	.108
		Sig. (2-tailed)	.068	.108	.445
		N	52	52	52
	CD31pos51pos_54pos	Correlation Coefficient	.121	.292*	.079
	Sig. (2-tailed)	.391	.036	.577	
	N	52	52	52	
CD31neg54pos	Correlation Coefficient	.024	.014	-.118	
	Sig. (2-tailed)	.864	.921	.404	
	N	52	52	52	
CD31neg51pos	Correlation Coefficient	.268	.126	.034	
	Sig. (2-tailed)	.054	.373	.809	
	N	52	52	52	
CD31neg51pos_54pos	Correlation Coefficient	.159	.145	-.057	
	Sig. (2-tailed)	.261	.304	.687	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in MS

Correlations

			putamen_ total_tphase_ ppb_mean	globus_total_ tphase_ppb_ mean	thal_total_ tphase_ppb_ mean
Spearman's rho	amyg_total_tphase_ppb_ mean	N	52	52	52
	accu_total_tphase_ppb_ mean	Correlation Coefficient	.424**	-.158	-.073
		Sig. (2-tailed)	.003	.288	.624
		N	47	47	47
	rednuc_total_tphase_ ppb_mean	Correlation Coefficient	.324*	.279*	-.006
		Sig. (2-tailed)	.022	.049	.969
		N	50	50	50
	subnig_total_tphase_ppb_ mean	Correlation Coefficient	.151	.359**	.040
		Sig. (2-tailed)	.285	.009	.780
		N	52	52	52
	pulvinar_total_tphase_ ppb_mean	Correlation Coefficient	.312*	.177	.551**
		Sig. (2-tailed)	.024	.208	.000
		N	52	52	52
	CD31pos	Correlation Coefficient	.108	.135	-.003
		Sig. (2-tailed)	.445	.341	.981
		N	52	52	52
	CD31pos51pos	Correlation Coefficient	.270	.017	.305*
		Sig. (2-tailed)	.053	.905	.028
		N	52	52	52
	CD31pos51pos_54pos	Correlation Coefficient	.100	.120	.212
	Sig. (2-tailed)	.479	.396	.131	
	N	52	52	52	
CD31neg54pos	Correlation Coefficient	-.019	.238	.039	
	Sig. (2-tailed)	.894	.089	.785	
	N	52	52	52	
CD31neg51pos	Correlation Coefficient	.299*	.071	.078	
	Sig. (2-tailed)	.031	.617	.584	
	N	52	52	52	
CD31neg51pos_54pos	Correlation Coefficient	.128	.022	.154	
	Sig. (2-tailed)	.366	.879	.276	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in MS

Correlations

			hipp_total_tphase_ppb_mean	amyg_total_tphase_ppb_mean	accu_total_tphase_ppb_mean
Spearman's rho	amyg_total_tphase_ppb_mean	N	52	52	47
	accu_total_tphase_ppb_mean	Correlation Coefficient	.152	.296*	1.000
		Sig. (2-tailed)	.308	.043	
		N	47	47	47
	rednuc_total_tphase_ppb_mean	Correlation Coefficient	-.104	.013	-.168
		Sig. (2-tailed)	.471	.929	.270
		N	50	50	45
	subnig_total_tphase_ppb_mean	Correlation Coefficient	.046	.164	-.081
		Sig. (2-tailed)	.748	.246	.587
		N	52	52	47
	pulvinar_total_tphase_ppb_mean	Correlation Coefficient	-.234	-.135	-.148
		Sig. (2-tailed)	.095	.339	.322
		N	52	52	47
	CD31pos	Correlation Coefficient	-.008	.176	.200
		Sig. (2-tailed)	.955	.212	.177
		N	52	52	47
	CD31pos51pos	Correlation Coefficient	-.021	.013	.163
		Sig. (2-tailed)	.880	.928	.275
		N	52	52	47
	CD31pos51pos_54pos	Correlation Coefficient	.019	.018	.012
	Sig. (2-tailed)	.896	.901	.935	
	N	52	52	47	
CD31neg54pos	Correlation Coefficient	.091	-.012	-.059	
	Sig. (2-tailed)	.522	.934	.694	
	N	52	52	47	
CD31neg51pos	Correlation Coefficient	.163	.032	.123	
	Sig. (2-tailed)	.249	.822	.408	
	N	52	52	47	
CD31neg51pos_54pos	Correlation Coefficient	.126	.051	.065	
	Sig. (2-tailed)	.374	.717	.665	

*. Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in MS

Correlations

			rednuc_total_tphase_ppb_mean	subnig_total_tphase_ppb_mean	pulvinar_total_tphase_ppb_mean
Spearman's rho	amyg_total_tphase_ppb_mean	N	50	52	52
	accu_total_tphase_ppb_mean	Correlation Coefficient	-.168	-.081	-.148
		Sig. (2-tailed)	.270	.587	.322
		N	45	47	47
	rednuc_total_tphase_ppb_mean	Correlation Coefficient	1.000	.350*	.251
		Sig. (2-tailed)	.	.013	.079
		N	50	50	50
	subnig_total_tphase_ppb_mean	Correlation Coefficient	.350*	1.000	.117
		Sig. (2-tailed)	.013	.	.409
		N	50	52	52
	pulvinar_total_tphase_ppb_mean	Correlation Coefficient	.251	.117	1.000
		Sig. (2-tailed)	.079	.409	.
		N	50	52	52
	CD31pos	Correlation Coefficient	.312*	.108	-.026
		Sig. (2-tailed)	.027	.446	.854
		N	50	52	52
	CD31pos51pos	Correlation Coefficient	.146	.143	.275*
		Sig. (2-tailed)	.311	.311	.049
		N	50	52	52
CD31pos51pos_54pos	Correlation Coefficient	.159	.208	.096	
	Sig. (2-tailed)	.269	.139	.500	
	N	50	52	52	
CD31neg54pos	Correlation Coefficient	.043	.062	.037	
	Sig. (2-tailed)	.766	.665	.792	
	N	50	52	52	
CD31neg51pos	Correlation Coefficient	.252	.064	.226	
	Sig. (2-tailed)	.078	.653	.106	
	N	50	52	52	
CD31neg51pos_54pos	Correlation Coefficient	.011	.085	.183	
	Sig. (2-tailed)	.940	.551	.195	

*. Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in MS

Correlations

			CD31pos	CD31pos51pos	CD31pos51pos_54pos
Spearman's rho	amyg_total_tphase_ppb_mean	N	52	52	52
	accu_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.200 .177 47	.163 .275 47	.012 .935 47
	rednuc_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.312* .027 50	.146 .311 50	.159 .269 50
	subnig_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.108 .446 52	.143 .311 52	.208 .139 52
	pulvinar_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	-.026 .854 52	.275* .049 52	.096 .500 52
	CD31pos	Correlation Coefficient Sig. (2-tailed) N	1.000 52	-.043 .763 52	-.016 .910 52
	CD31pos51pos	Correlation Coefficient Sig. (2-tailed) N	-.043 .763 52	1.000 52	.604** .000 52
	CD31pos51pos_54pos	Correlation Coefficient Sig. (2-tailed) N	-.016 .910 52	.604** .000 52	1.000 52
	CD31neg54pos	Correlation Coefficient Sig. (2-tailed) N	.143 .313 52	.002 .990 52	.531** .000 52
	CD31neg51pos	Correlation Coefficient Sig. (2-tailed) N	.113 .426 52	.505** .000 52	.458** .001 52
	CD31neg51pos_54pos	Correlation Coefficient Sig. (2-tailed)	-.044 .758	.349* .011	.632** .000

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in MS

Correlations

			CD31neg54pos	CD31neg51pos
Spearman's rho	amyg_total_tphase_ppb_mean	N	52	52
	accu_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	-.059 .694 47	.123 .408 47
	rednuc_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.043 .766 50	.252 .078 50
	subnig_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.062 .665 52	.064 .653 52
	pulvinar_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.037 .792 52	.226 .106 52
	CD31pos	Correlation Coefficient Sig. (2-tailed) N	.143 .313 52	.113 .426 52
	CD31pos51pos	Correlation Coefficient Sig. (2-tailed) N	.002 .990 52	.505** .000 52
	CD31pos51pos_54pos	Correlation Coefficient Sig. (2-tailed) N	.531** .000 52	.458** .001 52
	CD31neg54pos	Correlation Coefficient Sig. (2-tailed) N	1.000 .125 52	.215 .125 52
	CD31neg51pos	Correlation Coefficient Sig. (2-tailed) N	.215 .125 52	1.000 .125 52
	CD31neg51pos_54pos	Correlation Coefficient Sig. (2-tailed)	.358** .009	.487** .000

** . Correlation is significant at the 0.01 level (2-tailed).

. Correlation between iron MRI measures in MS

Correlations

			CD31neg51pos_54pos	CD31neg54pos2
Spearman's rho	amyg_total_tphase_ppb_mean	N	52	52
	accu_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.065 .665 47	-.021 .888 47
	rednuc_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.011 .940 50	.126 .384 50
	subnig_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.085 .551 52	-.033 .816 52
	pulvinar_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.183 .195 52	.007 .960 52
	CD31pos	Correlation Coefficient Sig. (2-tailed) N	-.044 .758 52	.164 .246 52
	CD31pos51pos	Correlation Coefficient Sig. (2-tailed) N	.349* .011 52	.070 .624 52
	CD31pos51pos_54pos	Correlation Coefficient Sig. (2-tailed) N	.632** .000 52	.237 .091 52
	CD31neg54pos	Correlation Coefficient Sig. (2-tailed) N	.358** .009 52	.392** .004 52
	CD31neg51pos	Correlation Coefficient Sig. (2-tailed) N	.487** .000 52	.381** .005 52
	CD31neg51pos_54pos	Correlation Coefficient Sig. (2-tailed)	1.000 .	.448** .001

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in MS

Correlations

			dgm_tphase_ppb_mean	wm_tphase_ppb_mean	caudate_total_tphase_ppb_mean
Spearman's rho	CD31neg51pos_54pos	N	52	52	52
	CD31neg54pos2	Correlation Coefficient	-.012	.060	-.304*
		Sig. (2-tailed)	.931	.674	.028
		N	52	52	52

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

			putamen_total_tphase_ppb_mean	globus_total_tphase_ppb_mean	thal_total_tphase_ppb_mean
Spearman's rho	CD31neg51pos_54pos	N	52	52	52
	CD31neg54pos2	Correlation Coefficient	-.027	.238	-.110
		Sig. (2-tailed)	.848	.090	.437
		N	52	52	52

Correlations

			hipp_total_tphase_ppb_mean	amyg_total_tphase_ppb_mean	accu_total_tphase_ppb_mean
Spearman's rho	CD31neg51pos_54pos	N	52	52	47
	CD31neg54pos2	Correlation Coefficient	.110	.093	-.021
		Sig. (2-tailed)	.436	.514	.888
		N	52	52	47

. Correlation between iron MRI measures in MS

Correlations

			rednuc_total_tphase_ppb_mean	subnig_total_tphase_ppb_mean	pulvinar_total_tphase_ppb_mean
Spearman's rho	CD31neg51pos_54pos	N	50	52	52
	CD31neg54pos2	Correlation Coefficient	.126	-.033	.007
		Sig. (2-tailed)	.384	.816	.960
		N	50	52	52

Correlations

			CD31pos	CD31pos51pos	CD31pos51pos_54pos
Spearman's rho	CD31neg51pos_54pos	N	52	52	52
	CD31neg54pos2	Correlation Coefficient	.164	.070	.237
		Sig. (2-tailed)	.246	.624	.091
		N	52	52	52

Correlations

			CD31neg54pos	CD31neg51pos
Spearman's rho	CD31neg51pos_54pos	N	52	52
	CD31neg54pos2	Correlation Coefficient	.392**	.381**
		Sig. (2-tailed)	.004	.005
		N	52	52

** . Correlation is significant at the 0.01 level (2-tailed).

Correlations

			CD31neg51pos_54pos	CD31neg54pos2
Spearman's rho	CD31neg51pos_54pos	N	52	52
	CD31neg54pos2	Correlation Coefficient	.448**	1.000
		Sig. (2-tailed)	.001	.
		N	52	52

** . Correlation is significant at the 0.01 level (2-tailed).

. Correlation between iron MRI measures in RRMS

Nonparametric Correlations

[DataSet1] C:\Users\rxz789\Documents\SPSS\VD-MRI project\CTEVD\Database\Phase I\LSU\Reduce
d sample size with CD31 data.sav

Correlations

			dgm_tphase_ppb_mean	wm_tphase_ppb_mean	caudate_total_tphase_ppb_mean
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	1.000	.162	.669**
		Sig. (2-tailed)	.	.332	.000
		N	38	38	38
	wm_tphase_ppb_mean	Correlation Coefficient	.162	1.000	.011
		Sig. (2-tailed)	.332	.	.945
		N	38	38	38
	caudate_total_tphase_ppb_mean	Correlation Coefficient	.669**	.011	1.000
		Sig. (2-tailed)	.000	.945	.
		N	38	38	38
	putamen_total_tphase_ppb_mean	Correlation Coefficient	.835**	.301	.647**
		Sig. (2-tailed)	.000	.066	.000
		N	38	38	38
	globus_total_tphase_ppb_mean	Correlation Coefficient	.422**	.040	.451**
		Sig. (2-tailed)	.008	.812	.004
		N	38	38	38
	thal_total_tphase_ppb_mean	Correlation Coefficient	.361*	-.169	.349*
		Sig. (2-tailed)	.026	.309	.032
		N	38	38	38
	hipp_total_tphase_ppb_mean	Correlation Coefficient	.083	-.050	-.111
		Sig. (2-tailed)	.621	.764	.506
		N	38	38	38
	amyg_total_tphase_ppb_mean	Correlation Coefficient	.225	-.254	.212
		Sig. (2-tailed)	.174	.124	.201

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in RRMS

Correlations

			putamen_ total_tphase_ ppb_mean	globus_total_ tphase_ppb_ mean	thal_total_ tphase_ppb_ mean
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	.835**	.422**	.361*
		Sig. (2-tailed)	.000	.008	.026
		N	38	38	38
	wm_tphase_ppb_mean	Correlation Coefficient	.301	.040	-.169
		Sig. (2-tailed)	.066	.812	.309
		N	38	38	38
	caudate_total_tphase_ ppb_mean	Correlation Coefficient	.647**	.451**	.349*
		Sig. (2-tailed)	.000	.004	.032
		N	38	38	38
	putamen_total_tphase_ ppb_mean	Correlation Coefficient	1.000	.383*	.311
		Sig. (2-tailed)	.	.018	.057
		N	38	38	38
	globus_total_tphase_ppb_ mean	Correlation Coefficient	.383*	1.000	.104
		Sig. (2-tailed)	.018	.	.534
		N	38	38	38
	thal_total_tphase_ppb_ mean	Correlation Coefficient	.311	.104	1.000
		Sig. (2-tailed)	.057	.534	.
		N	38	38	38
	hipp_total_tphase_ppb_ mean	Correlation Coefficient	-.193	.045	-.368*
		Sig. (2-tailed)	.246	.789	.023
		N	38	38	38
	amyg_total_tphase_ppb_ mean	Correlation Coefficient	.015	.029	-.150
		Sig. (2-tailed)	.927	.865	.369

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in RRMS

Correlations

			hipp_total_tphase_ppb_mean	amyg_total_tphase_ppb_mean	accu_total_tphase_ppb_mean
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	.083	.225	.651**
		Sig. (2-tailed)	.621	.174	.000
		N	38	38	33
	wm_tphase_ppb_mean	Correlation Coefficient	-.050	-.254	.148
		Sig. (2-tailed)	.764	.124	.410
		N	38	38	33
	caudate_total_tphase_ppb_mean	Correlation Coefficient	-.111	.212	.273
		Sig. (2-tailed)	.506	.201	.125
		N	38	38	33
	putamen_total_tphase_ppb_mean	Correlation Coefficient	-.193	.015	.473**
		Sig. (2-tailed)	.246	.927	.005
		N	38	38	33
	globus_total_tphase_ppb_mean	Correlation Coefficient	.045	.029	-.096
		Sig. (2-tailed)	.789	.865	.597
		N	38	38	33
	thal_total_tphase_ppb_mean	Correlation Coefficient	-.368*	-.150	.007
		Sig. (2-tailed)	.023	.369	.969
		N	38	38	33
	hipp_total_tphase_ppb_mean	Correlation Coefficient	1.000	.472**	.136
		Sig. (2-tailed)	.	.003	.450
		N	38	38	33
	amyg_total_tphase_ppb_mean	Correlation Coefficient	.472**	1.000	.317
		Sig. (2-tailed)	.003	.	.072

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in RRMS

Correlations

			rednuc_total_tphase_ppb_mean	subnig_total_tphase_ppb_mean	pulvinar_total_tphase_ppb_mean
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	.142	.141	.096
		Sig. (2-tailed)	.403	.400	.568
		N	37	38	38
	wm_tphase_ppb_mean	Correlation Coefficient	.354*	-.016	-.072
		Sig. (2-tailed)	.032	.924	.668
		N	37	38	38
	caudate_total_tphase_ppb_mean	Correlation Coefficient	.383*	.240	.150
		Sig. (2-tailed)	.019	.147	.370
		N	37	38	38
	putamen_total_tphase_ppb_mean	Correlation Coefficient	.299	.127	.233
		Sig. (2-tailed)	.072	.448	.159
		N	37	38	38
	globus_total_tphase_ppb_mean	Correlation Coefficient	.190	.310	-.003
		Sig. (2-tailed)	.259	.058	.986
		N	37	38	38
	thal_total_tphase_ppb_mean	Correlation Coefficient	-.039	.005	.492**
		Sig. (2-tailed)	.818	.975	.002
		N	37	38	38
	hipp_total_tphase_ppb_mean	Correlation Coefficient	-.196	.030	-.384*
		Sig. (2-tailed)	.245	.859	.017
		N	37	38	38
	amyg_total_tphase_ppb_mean	Correlation Coefficient	-.239	.134	-.264
		Sig. (2-tailed)	.155	.422	.109

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in RRMS

Correlations

			CD31pos	CD31pos51pos	CD31pos51pos_54pos
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	.308	.344*	.226
		Sig. (2-tailed)	.060	.035	.172
		N	38	38	38
	wm_tphase_ppb_mean	Correlation Coefficient	.073	.247	.249
		Sig. (2-tailed)	.665	.136	.131
		N	38	38	38
	caudate_total_tphase_ppb_mean	Correlation Coefficient	.296	.128	-.026
		Sig. (2-tailed)	.071	.443	.875
		N	38	38	38
	putamen_total_tphase_ppb_mean	Correlation Coefficient	.196	.234	.136
		Sig. (2-tailed)	.237	.158	.417
		N	38	38	38
	globus_total_tphase_ppb_mean	Correlation Coefficient	.233	.068	-.051
		Sig. (2-tailed)	.159	.683	.763
		N	38	38	38
	thal_total_tphase_ppb_mean	Correlation Coefficient	.168	.413**	.224
		Sig. (2-tailed)	.312	.010	.176
		N	38	38	38
	hipp_total_tphase_ppb_mean	Correlation Coefficient	-.072	-.027	.101
		Sig. (2-tailed)	.668	.872	.546
		N	38	38	38
	amyg_total_tphase_ppb_mean	Correlation Coefficient	.215	.037	.047
		Sig. (2-tailed)	.196	.827	.778

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in RRMS

Correlations

			CD31neg54po s	CD31neg51po s
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	.067	.265
		Sig. (2-tailed)	.688	.109
		N	38	38
	wm_tphase_ppb_mean	Correlation Coefficient	-.059	.125
		Sig. (2-tailed)	.724	.454
		N	38	38
	caudate_total_tphase_ppb_mean	Correlation Coefficient	-.234	.075
		Sig. (2-tailed)	.158	.654
		N	38	38
	putamen_total_tphase_ppb_mean	Correlation Coefficient	.021	.190
		Sig. (2-tailed)	.902	.253
		N	38	38
	globus_total_tphase_ppb_mean	Correlation Coefficient	.037	.106
		Sig. (2-tailed)	.827	.527
		N	38	38
	thal_total_tphase_ppb_mean	Correlation Coefficient	-.018	.188
		Sig. (2-tailed)	.915	.258
		N	38	38
	hipp_total_tphase_ppb_mean	Correlation Coefficient	.153	.148
		Sig. (2-tailed)	.359	.374
		N	38	38
	amyg_total_tphase_ppb_mean	Correlation Coefficient	-.060	-.040
		Sig. (2-tailed)	.719	.812

. Correlation between iron MRI measures in RRMS

Correlations

			CD31neg51pos_54pos	CD31neg54pos2
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	.076	-.030
		Sig. (2-tailed)	.650	.860
		N	38	38
	wm_tphase_ppb_mean	Correlation Coefficient	.066	.093
		Sig. (2-tailed)	.694	.578
		N	38	38
	caudate_total_tphase_ppb_mean	Correlation Coefficient	-.102	-.354*
		Sig. (2-tailed)	.541	.029
		N	38	38
	putamen_total_tphase_ppb_mean	Correlation Coefficient	.040	-.044
		Sig. (2-tailed)	.810	.792
		N	38	38
	globus_total_tphase_ppb_mean	Correlation Coefficient	-.082	.165
		Sig. (2-tailed)	.624	.323
		N	38	38
	thal_total_tphase_ppb_mean	Correlation Coefficient	.181	-.233
		Sig. (2-tailed)	.277	.159
		N	38	38
	hipp_total_tphase_ppb_mean	Correlation Coefficient	.085	.180
		Sig. (2-tailed)	.613	.278
		N	38	38
	amyg_total_tphase_ppb_mean	Correlation Coefficient	-.009	.098
		Sig. (2-tailed)	.957	.556

*. Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in RRMS

Correlations

			dgm_tphase_ ppb_mean	wm_tphase_ ppb_mean	caudate_ total_tphase_ ppb_mean
Spearman's rho	amyg_total_tphase_ppb_ mean	N	38	38	38
	accu_total_tphase_ppb_ mean	Correlation Coefficient	.651**	.148	.273
		Sig. (2-tailed)	.000	.410	.125
		N	33	33	33
	rednuc_total_tphase_ ppb_mean	Correlation Coefficient	.142	.354*	.383*
		Sig. (2-tailed)	.403	.032	.019
		N	37	37	37
	subnig_total_tphase_ppb_ mean	Correlation Coefficient	.141	-.016	.240
		Sig. (2-tailed)	.400	.924	.147
		N	38	38	38
	pulvinar_total_tphase_ ppb_mean	Correlation Coefficient	.096	-.072	.150
		Sig. (2-tailed)	.568	.668	.370
		N	38	38	38
	CD31pos	Correlation Coefficient	.308	.073	.296
		Sig. (2-tailed)	.060	.665	.071
		N	38	38	38
	CD31pos51pos	Correlation Coefficient	.344*	.247	.128
		Sig. (2-tailed)	.035	.136	.443
		N	38	38	38
	CD31pos51pos_54pos	Correlation Coefficient	.226	.249	-.026
	Sig. (2-tailed)	.172	.131	.875	
	N	38	38	38	
CD31neg54pos	Correlation Coefficient	.067	-.059	-.234	
	Sig. (2-tailed)	.688	.724	.158	
	N	38	38	38	
CD31neg51pos	Correlation Coefficient	.265	.125	.075	
	Sig. (2-tailed)	.109	.454	.654	
	N	38	38	38	
CD31neg51pos_54pos	Correlation Coefficient	.076	.066	-.102	
	Sig. (2-tailed)	.650	.694	.541	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in RRMS

Correlations

			putamen_ total_tphase_ ppb_mean	globus_total_ tphase_ppb_ mean	thal_total_ tphase_ppb_ mean
Spearman's rho	amyg_total_tphase_ppb_ mean	N	38	38	38
	accu_total_tphase_ppb_ mean	Correlation Coefficient	.473**	-.096	.007
		Sig. (2-tailed)	.005	.597	.969
		N	33	33	33
	rednuc_total_tphase_ ppb_mean	Correlation Coefficient	.299	.190	-.039
		Sig. (2-tailed)	.072	.259	.818
		N	37	37	37
	subnig_total_tphase_ppb_ mean	Correlation Coefficient	.127	.310	.005
		Sig. (2-tailed)	.448	.058	.975
		N	38	38	38
	pulvinar_total_tphase_ ppb_mean	Correlation Coefficient	.233	-.003	.492**
		Sig. (2-tailed)	.159	.986	.002
		N	38	38	38
	CD31pos	Correlation Coefficient	.196	.233	.168
		Sig. (2-tailed)	.237	.159	.312
		N	38	38	38
	CD31pos51pos	Correlation Coefficient	.234	.068	.413**
		Sig. (2-tailed)	.158	.683	.010
		N	38	38	38
	CD31pos51pos_54pos	Correlation Coefficient	.136	-.051	.224
	Sig. (2-tailed)	.417	.763	.176	
	N	38	38	38	
CD31neg54pos	Correlation Coefficient	.021	.037	-.018	
	Sig. (2-tailed)	.902	.827	.915	
	N	38	38	38	
CD31neg51pos	Correlation Coefficient	.190	.106	.188	
	Sig. (2-tailed)	.253	.527	.258	
	N	38	38	38	
CD31neg51pos_54pos	Correlation Coefficient	.040	-.082	.181	
	Sig. (2-tailed)	.810	.624	.277	

** . Correlation is significant at the 0.01 level (2-tailed).

. Correlation between iron MRI measures in RRMS

Correlations

			hipp_total_tphase_ppb_mean	amyg_total_tphase_ppb_mean	accu_total_tphase_ppb_mean
Spearman's rho	amyg_total_tphase_ppb_mean	N	38	38	33
	accu_total_tphase_ppb_mean	Correlation Coefficient	.136	.317	1.000
		Sig. (2-tailed)	.450	.072	.
		N	33	33	33
	rednuc_total_tphase_ppb_mean	Correlation Coefficient	-.196	-.239	-.178
		Sig. (2-tailed)	.245	.155	.329
		N	37	37	32
	subnig_total_tphase_ppb_mean	Correlation Coefficient	.030	.134	-.036
		Sig. (2-tailed)	.859	.422	.842
		N	38	38	33
	pulvinar_total_tphase_ppb_mean	Correlation Coefficient	-.384*	-.264	-.182
		Sig. (2-tailed)	.017	.109	.310
		N	38	38	33
	CD31pos	Correlation Coefficient	-.072	.215	.202
		Sig. (2-tailed)	.668	.196	.260
		N	38	38	33
	CD31pos51pos	Correlation Coefficient	-.027	.037	.127
		Sig. (2-tailed)	.872	.827	.482
		N	38	38	33
	CD31pos51pos_54pos	Correlation Coefficient	.101	.047	.131
	Sig. (2-tailed)	.546	.778	.467	
	N	38	38	33	
CD31neg54pos	Correlation Coefficient	.153	-.060	.056	
	Sig. (2-tailed)	.359	.719	.757	
	N	38	38	33	
CD31neg51pos	Correlation Coefficient	.148	-.040	.010	
	Sig. (2-tailed)	.374	.812	.954	
	N	38	38	33	
CD31neg51pos_54pos	Correlation Coefficient	.085	-.009	.022	
	Sig. (2-tailed)	.613	.957	.902	

*. Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in RRMS

Correlations

			rednuc_total_tphase_ppb_mean	subnig_total_tphase_ppb_mean	pulvinar_total_tphase_ppb_mean
Spearman's rho	amyg_total_tphase_ppb_mean	N	37	38	38
	accu_total_tphase_ppb_mean	Correlation Coefficient	-.178	-.036	-.182
		Sig. (2-tailed)	.329	.842	.310
		N	32	33	33
	rednuc_total_tphase_ppb_mean	Correlation Coefficient	1.000	.245	.165
		Sig. (2-tailed)	.	.144	.330
		N	37	37	37
	subnig_total_tphase_ppb_mean	Correlation Coefficient	.245	1.000	.062
		Sig. (2-tailed)	.144	.	.709
		N	37	38	38
	pulvinar_total_tphase_ppb_mean	Correlation Coefficient	.165	.062	1.000
		Sig. (2-tailed)	.330	.709	.
		N	37	38	38
	CD31pos	Correlation Coefficient	.354*	.196	.029
		Sig. (2-tailed)	.032	.238	.862
	N	37	38	38	
CD31pos51pos	Correlation Coefficient	.073	.164	.224	
	Sig. (2-tailed)	.668	.324	.176	
	N	37	38	38	
CD31pos51pos_54pos	Correlation Coefficient	.055	.209	.001	
	Sig. (2-tailed)	.745	.209	.996	
	N	37	38	38	
CD31neg54pos	Correlation Coefficient	-.004	.182	-.036	
	Sig. (2-tailed)	.982	.273	.832	
	N	37	38	38	
CD31neg51pos	Correlation Coefficient	.249	.027	.160	
	Sig. (2-tailed)	.137	.873	.338	
	N	37	38	38	
CD31neg51pos_54pos	Correlation Coefficient	-.051	.158	.153	
	Sig. (2-tailed)	.763	.343	.360	

*. Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in RRMS

Correlations

			CD31pos	CD31pos51pos	CD31pos51pos_54pos
Spearman's rho	amyg_total_tphase_ppb_mean	N	38	38	38
	accu_total_tphase_ppb_mean	Correlation Coefficient	.202	.127	.131
		Sig. (2-tailed)	.260	.482	.467
		N	33	33	33
	rednuc_total_tphase_ppb_mean	Correlation Coefficient	.354*	.073	.055
		Sig. (2-tailed)	.032	.668	.745
		N	37	37	37
	subnig_total_tphase_ppb_mean	Correlation Coefficient	.196	.164	.209
		Sig. (2-tailed)	.238	.324	.209
		N	38	38	38
	pulvinar_total_tphase_ppb_mean	Correlation Coefficient	.029	.224	.001
		Sig. (2-tailed)	.862	.176	.996
		N	38	38	38
	CD31pos	Correlation Coefficient	1.000	-.020	.021
		Sig. (2-tailed)	.	.906	.900
		N	38	38	38
	CD31pos51pos	Correlation Coefficient	-.020	1.000	.648**
		Sig. (2-tailed)	.906	.	.000
		N	38	38	38
	CD31pos51pos_54pos	Correlation Coefficient	.021	.648**	1.000
	Sig. (2-tailed)	.900	.000	.	
	N	38	38	38	
CD31neg54pos	Correlation Coefficient	.139	.055	.482**	
	Sig. (2-tailed)	.406	.744	.002	
	N	38	38	38	
CD31neg51pos	Correlation Coefficient	.144	.457**	.516**	
	Sig. (2-tailed)	.387	.004	.001	
	N	38	38	38	
CD31neg51pos_54pos	Correlation Coefficient	.049	.341*	.687**	
	Sig. (2-tailed)	.770	.036	.000	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in RRMS

Correlations

			CD31neg54pos	CD31neg51pos
Spearman's rho	amyg_total_tphase_ppb_mean	N	38	38
	accu_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.056 .757 33	.010 .954 33
	rednuc_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	-.004 .982 37	.249 .137 37
	subnig_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.182 .273 38	.027 .873 38
	pulvinar_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	-.036 .832 38	.160 .338 38
	CD31pos	Correlation Coefficient Sig. (2-tailed) N	.139 .406 38	.144 .387 38
	CD31pos51pos	Correlation Coefficient Sig. (2-tailed) N	.055 .744 38	.457** .004 38
	CD31pos51pos_54pos	Correlation Coefficient Sig. (2-tailed) N	.482** .002 38	.516** .001 38
	CD31neg54pos	Correlation Coefficient Sig. (2-tailed) N	1.000 .130 38	.250 .130 38
	CD31neg51pos	Correlation Coefficient Sig. (2-tailed) N	.250 .130 38	1.000 .130 38
	CD31neg51pos_54pos	Correlation Coefficient Sig. (2-tailed)	.359* .027	.522** .001

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in RRMS

Correlations

			CD31neg51pos_54pos	CD31neg54pos2
Spearman's rho	amyg_total_tphase_ppb_mean	N	38	38
	accu_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.022 .902 33	-.042 .818 33
	rednuc_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	-.051 .763 37	.052 .758 37
	subnig_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.158 .343 38	-.056 .737 38
	pulvinar_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.153 .360 38	-.110 .513 38
	CD31pos	Correlation Coefficient Sig. (2-tailed) N	.049 .770 38	.277 .093 38
	CD31pos51pos	Correlation Coefficient Sig. (2-tailed) N	.341* .036 38	.012 .941 38
	CD31pos51pos_54pos	Correlation Coefficient Sig. (2-tailed) N	.687** .000 38	.129 .440 38
	CD31neg54pos	Correlation Coefficient Sig. (2-tailed) N	.359* .027 38	.316 .053 38
	CD31neg51pos	Correlation Coefficient Sig. (2-tailed) N	.522** .001 38	.350* .031 38
	CD31neg51pos_54pos	Correlation Coefficient Sig. (2-tailed)	1.000 .	.332* .042

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in RRMS

Correlations

			dgm_tphase_ppb_mean	wm_tphase_ppb_mean	caudate_total_tphase_ppb_mean
Spearman's rho	CD31neg51pos_54pos	N	38	38	38
	CD31neg54pos2	Correlation Coefficient	-.030	.093	-.354*
		Sig. (2-tailed)	.860	.578	.029
		N	38	38	38

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

			putamen_total_tphase_ppb_mean	globus_total_tphase_ppb_mean	thal_total_tphase_ppb_mean
Spearman's rho	CD31neg51pos_54pos	N	38	38	38
	CD31neg54pos2	Correlation Coefficient	-.044	.165	-.233
		Sig. (2-tailed)	.792	.323	.159
		N	38	38	38

Correlations

			hipp_total_tphase_ppb_mean	amyg_total_tphase_ppb_mean	accu_total_tphase_ppb_mean
Spearman's rho	CD31neg51pos_54pos	N	38	38	33
	CD31neg54pos2	Correlation Coefficient	.180	.098	-.042
		Sig. (2-tailed)	.278	.556	.818
		N	38	38	33

. Correlation between iron MRI measures in RRMS

Correlations

			rednuc_total_ tphase_ppb_ mean	subnig_total_ tphase_ppb_ mean	pulvinar_ total_tphase_ ppb_mean
Spearman's rho	CD31neg51pos_54pos	N	37	38	38
	CD31neg54pos2	Correlation Coefficient	.052	-.056	-.110
		Sig. (2-tailed)	.758	.737	.513
		N	37	38	38

Correlations

			CD31pos	CD31pos51po s	CD31pos51po s_54pos
Spearman's rho	CD31neg51pos_54pos	N	38	38	38
	CD31neg54pos2	Correlation Coefficient	.277	.012	.129
		Sig. (2-tailed)	.093	.941	.440
		N	38	38	38

Correlations

			CD31neg54po s	CD31neg51po s
Spearman's rho	CD31neg51pos_54pos	N	38	38
	CD31neg54pos2	Correlation Coefficient	.316	.350*
		Sig. (2-tailed)	.053	.031
		N	38	38

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

			CD31neg51po s_54pos	CD31neg54po s2
Spearman's rho	CD31neg51pos_54pos	N	38	38
	CD31neg54pos2	Correlation Coefficient	.332*	1.000
		Sig. (2-tailed)	.042	.
		N	38	38

*. Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in SPMS

Nonparametric Correlations

[DataSet1] C:\Users\rxz789\Documents\SPSS\VD-MRI project\CTEVD\Database\Phase I\LSU\Reduced sample size with CD31 data.sav

Correlations

			dgm_tphase_ppb_mean	wm_tphase_ppb_mean	caudate_total_tphase_ppb_mean
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	1.000	.138	.011
		Sig. (2-tailed)	.	.637	.970
		N	14	14	14
	wm_tphase_ppb_mean	Correlation Coefficient	.138	1.000	.604*
		Sig. (2-tailed)	.637	.	.022
		N	14	14	14
	caudate_total_tphase_ppb_mean	Correlation Coefficient	.011	.604*	1.000
		Sig. (2-tailed)	.970	.022	.
		N	14	14	14
	putamen_total_tphase_ppb_mean	Correlation Coefficient	.833**	.103	-.081
		Sig. (2-tailed)	.000	.725	.782
		N	14	14	14
	globus_total_tphase_ppb_mean	Correlation Coefficient	.231	-.064	.090
		Sig. (2-tailed)	.427	.829	.759
		N	14	14	14
	thal_total_tphase_ppb_mean	Correlation Coefficient	.138	-.121	.068
		Sig. (2-tailed)	.637	.681	.817
		N	14	14	14
	hipp_total_tphase_ppb_mean	Correlation Coefficient	.859**	-.024	.134
		Sig. (2-tailed)	.000	.935	.648
		N	14	14	14
	amyg_total_tphase_ppb_mean	Correlation Coefficient	.714**	.248	-.007
		Sig. (2-tailed)	.004	.392	.982

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in SPMS

Correlations

			putamen_ total_tphase_ ppb_mean	globus_total_ tphase_ppb_ mean	thal_total_ tphase_ppb_ mean
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	.833**	.231	.138
		Sig. (2-tailed)	.000	.427	.637
		N	14	14	14
	wm_tphase_ppb_mean	Correlation Coefficient	.103	-.064	-.121
		Sig. (2-tailed)	.725	.829	.681
		N	14	14	14
	caudate_total_tphase_ ppb_mean	Correlation Coefficient	-.081	.090	.068
		Sig. (2-tailed)	.782	.759	.817
		N	14	14	14
	putamen_total_tphase_ ppb_mean	Correlation Coefficient	1.000	.015	-.046
		Sig. (2-tailed)	.	.958	.876
		N	14	14	14
	globus_total_tphase_ppb_ mean	Correlation Coefficient	.015	1.000	.525
		Sig. (2-tailed)	.958	.	.054
		N	14	14	14
	thal_total_tphase_ppb_ mean	Correlation Coefficient	-.046	.525	1.000
		Sig. (2-tailed)	.876	.054	.
		N	14	14	14
	hipp_total_tphase_ppb_ mean	Correlation Coefficient	.736**	.099	-.103
		Sig. (2-tailed)	.003	.737	.725
		N	14	14	14
	amyg_total_tphase_ppb_ mean	Correlation Coefficient	.596*	.090	-.191
		Sig. (2-tailed)	.025	.759	.513

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in SPMS

Correlations

			hipp_total_tphase_ppb_mean	amyg_total_tphase_ppb_mean	accu_total_tphase_ppb_mean
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	.859**	.714**	.279
		Sig. (2-tailed)	.000	.004	.334
		N	14	14	14
	wm_tphase_ppb_mean	Correlation Coefficient	-.024	.248	.222
		Sig. (2-tailed)	.935	.392	.446
		N	14	14	14
	caudate_total_tphase_ppb_mean	Correlation Coefficient	.134	-.007	-.332
		Sig. (2-tailed)	.648	.982	.246
		N	14	14	14
	putamen_total_tphase_ppb_mean	Correlation Coefficient	.736**	.596*	.407
		Sig. (2-tailed)	.003	.025	.149
		N	14	14	14
	globus_total_tphase_ppb_mean	Correlation Coefficient	.099	.090	-.380
		Sig. (2-tailed)	.737	.759	.180
		N	14	14	14
	thal_total_tphase_ppb_mean	Correlation Coefficient	-.103	-.191	-.393
		Sig. (2-tailed)	.725	.513	.164
		N	14	14	14
	hipp_total_tphase_ppb_mean	Correlation Coefficient	1.000	.508	.152
		Sig. (2-tailed)	.	.064	.605
		N	14	14	14
	amyg_total_tphase_ppb_mean	Correlation Coefficient	.508	1.000	.125
		Sig. (2-tailed)	.064	.	.670

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in SPMS

Correlations

			rednuc_total_tphase_ppb_mean	subnig_total_tphase_ppb_mean	pulvinar_total_tphase_ppb_mean
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	.280	.218	.446
		Sig. (2-tailed)	.354	.455	.110
		N	13	14	14
	wm_tphase_ppb_mean	Correlation Coefficient	.143	.323	-.204
		Sig. (2-tailed)	.642	.260	.483
		N	13	14	14
	caudate_total_tphase_ppb_mean	Correlation Coefficient	.044	.600*	-.103
		Sig. (2-tailed)	.887	.023	.725
		N	13	14	14
	putamen_total_tphase_ppb_mean	Correlation Coefficient	.346	.196	.486
		Sig. (2-tailed)	.247	.503	.078
		N	13	14	14
	globus_total_tphase_ppb_mean	Correlation Coefficient	.319	.424	.503
		Sig. (2-tailed)	.289	.131	.067
		N	13	14	14
	thal_total_tphase_ppb_mean	Correlation Coefficient	.115	.068	.758**
		Sig. (2-tailed)	.707	.817	.002
		N	13	14	14
	hipp_total_tphase_ppb_mean	Correlation Coefficient	.132	.222	.262
		Sig. (2-tailed)	.668	.446	.366
		N	13	14	14
	amyg_total_tphase_ppb_mean	Correlation Coefficient	.390	.253	.046
		Sig. (2-tailed)	.188	.383	.876

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in SPMS

Correlations

			CD31pos	CD31pos51pos	CD31pos51pos_54pos
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	-.020	-.011	-.270
		Sig. (2-tailed)	.946	.970	.350
		N	14	14	14
	wm_tphase_ppb_mean	Correlation Coefficient	-.240	.073	.196
		Sig. (2-tailed)	.409	.805	.503
		N	14	14	14
	caudate_total_tphase_ppb_mean	Correlation Coefficient	-.389	-.068	.262
		Sig. (2-tailed)	.169	.817	.366
		N	14	14	14
	putamen_total_tphase_ppb_mean	Correlation Coefficient	-.007	.437	-.011
		Sig. (2-tailed)	.982	.118	.970
		N	14	14	14
	globus_total_tphase_ppb_mean	Correlation Coefficient	-.244	-.204	.437
		Sig. (2-tailed)	.401	.483	.118
		N	14	14	14
	thal_total_tphase_ppb_mean	Correlation Coefficient	-.473	.024	.231
		Sig. (2-tailed)	.088	.935	.427
		N	14	14	14
	hipp_total_tphase_ppb_mean	Correlation Coefficient	.099	-.015	-.305
		Sig. (2-tailed)	.737	.958	.288
		N	14	14	14
	amyg_total_tphase_ppb_mean	Correlation Coefficient	.213	-.266	-.310
		Sig. (2-tailed)	.464	.358	.281
		N			

. Correlation between iron MRI measures in SPMS

Correlations

			CD31neg54pos	CD31neg51pos
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	-.064	.451
		Sig. (2-tailed)	.829	.106
		N	14	14
	wm_tphase_ppb_mean	Correlation Coefficient	-.095	.226
		Sig. (2-tailed)	.748	.436
		N	14	14
	caudate_total_tphase_ppb_mean	Correlation Coefficient	-.077	-.174
		Sig. (2-tailed)	.794	.553
		N	14	14
	putamen_total_tphase_ppb_mean	Correlation Coefficient	-.081	.697**
		Sig. (2-tailed)	.782	.006
		N	14	14
	globus_total_tphase_ppb_mean	Correlation Coefficient	.556*	.015
		Sig. (2-tailed)	.039	.958
		N	14	14
	thal_total_tphase_ppb_mean	Correlation Coefficient	.240	-.073
		Sig. (2-tailed)	.409	.805
		N	14	14
	hipp_total_tphase_ppb_mean	Correlation Coefficient	-.152	.336
		Sig. (2-tailed)	.605	.240
		N	14	14
	amyg_total_tphase_ppb_mean	Correlation Coefficient	.007	.231
		Sig. (2-tailed)	.982	.427

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in SPMS

Correlations

			CD31neg51pos_54pos	CD31neg54pos2
Spearman's rho	dgm_tphase_ppb_mean	Correlation Coefficient	.275	.090
		Sig. (2-tailed)	.342	.759
		N	14	14
	wm_tphase_ppb_mean	Correlation Coefficient	-.081	.015
		Sig. (2-tailed)	.782	.958
		N	14	14
	caudate_total_tphase_ppb_mean	Correlation Coefficient	-.090	-.068
		Sig. (2-tailed)	.759	.817
		N	14	14
	putamen_total_tphase_ppb_mean	Correlation Coefficient	.354	.081
		Sig. (2-tailed)	.215	.782
		N	14	14
	globus_total_tphase_ppb_mean	Correlation Coefficient	.332	.398
		Sig. (2-tailed)	.246	.159
		N	14	14
	thal_total_tphase_ppb_mean	Correlation Coefficient	.204	.204
		Sig. (2-tailed)	.483	.483
		N	14	14
	hipp_total_tphase_ppb_mean	Correlation Coefficient	.262	-.011
		Sig. (2-tailed)	.366	.970
		N	14	14
	amyg_total_tphase_ppb_mean	Correlation Coefficient	-.024	.055
		Sig. (2-tailed)	.935	.852

. Correlation between iron MRI measures in SPMS

Correlations

			dgm_tphase_ ppb_mean	wm_tphase_ ppb_mean	caudate_ total_tphase_ ppb_mean
Spearman's rho	amyg_total_tphase_ppb_ mean	N	14	14	14
	accu_total_tphase_ppb_ mean	Correlation Coefficient	.279	.222	-.332
		Sig. (2-tailed)	.334	.446	.246
		N	14	14	14
	rednuc_total_tphase_ ppb_mean	Correlation Coefficient	.280	.143	.044
		Sig. (2-tailed)	.354	.642	.887
		N	13	13	13
	subnig_total_tphase_ppb_ mean	Correlation Coefficient	.218	.323	.600*
		Sig. (2-tailed)	.455	.260	.023
		N	14	14	14
	pulvinar_total_tphase_ ppb_mean	Correlation Coefficient	.446	-.204	-.103
		Sig. (2-tailed)	.110	.483	.725
		N	14	14	14
	CD31pos	Correlation Coefficient	-.020	-.240	-.389
		Sig. (2-tailed)	.946	.409	.169
		N	14	14	14
	CD31pos51pos	Correlation Coefficient	-.011	.073	-.068
		Sig. (2-tailed)	.970	.805	.817
		N	14	14	14
	CD31pos51pos_54pos	Correlation Coefficient	-.270	.196	.262
	Sig. (2-tailed)	.350	.503	.366	
	N	14	14	14	
CD31neg54pos	Correlation Coefficient	-.064	-.095	-.077	
	Sig. (2-tailed)	.829	.748	.794	
	N	14	14	14	
CD31neg51pos	Correlation Coefficient	.451	.226	-.174	
	Sig. (2-tailed)	.106	.436	.553	
	N	14	14	14	
CD31neg51pos_54pos	Correlation Coefficient	.275	-.081	-.090	
	Sig. (2-tailed)	.342	.782	.759	

*. Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in SPMS

Correlations

			putamen_ total_tphase_ ppb_mean	globus_total_ tphase_ppb_ mean	thal_total_ tphase_ppb_ mean
Spearman's rho	amyg_total_tphase_ppb_ mean	N	14	14	14
	accu_total_tphase_ppb_ mean	Correlation Coefficient	.407	-.380	-.393
		Sig. (2-tailed)	.149	.180	.164
		N	14	14	14
	rednuc_total_tphase_ ppb_mean	Correlation Coefficient	.346	.319	.115
		Sig. (2-tailed)	.247	.289	.707
		N	13	13	13
	subnig_total_tphase_ppb_ mean	Correlation Coefficient	.196	.424	.068
		Sig. (2-tailed)	.503	.131	.817
		N	14	14	14
	pulvinar_total_tphase_ ppb_mean	Correlation Coefficient	.486	.503	.758**
		Sig. (2-tailed)	.078	.067	.002
		N	14	14	14
	CD31pos	Correlation Coefficient	-.007	-.244	-.473
		Sig. (2-tailed)	.982	.401	.088
		N	14	14	14
	CD31pos51pos	Correlation Coefficient	.437	-.204	.024
		Sig. (2-tailed)	.118	.483	.935
		N	14	14	14
	CD31pos51pos_54pos	Correlation Coefficient	-.011	.437	.231
	Sig. (2-tailed)	.970	.118	.427	
	N	14	14	14	
CD31neg54pos	Correlation Coefficient	-.081	.556*	.240	
	Sig. (2-tailed)	.782	.039	.409	
	N	14	14	14	
CD31neg51pos	Correlation Coefficient	.697**	.015	-.073	
	Sig. (2-tailed)	.006	.958	.805	
	N	14	14	14	
CD31neg51pos_54pos	Correlation Coefficient	.354	.332	.204	
	Sig. (2-tailed)	.215	.246	.483	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in SPMS

Correlations

			hipp_total_tphase_ppb_mean	amyg_total_tphase_ppb_mean	accu_total_tphase_ppb_mean
Spearman's rho	amyg_total_tphase_ppb_mean	N	14	14	14
	accu_total_tphase_ppb_mean	Correlation Coefficient	.152	.125	1.000
		Sig. (2-tailed)	.605	.670	.
		N	14	14	14
	rednuc_total_tphase_ppb_mean	Correlation Coefficient	.132	.390	-.066
		Sig. (2-tailed)	.668	.188	.831
		N	13	13	13
	subnig_total_tphase_ppb_mean	Correlation Coefficient	.222	.253	-.240
		Sig. (2-tailed)	.446	.383	.409
		N	14	14	14
	pulvinar_total_tphase_ppb_mean	Correlation Coefficient	.262	.046	-.169
		Sig. (2-tailed)	.366	.876	.563
		N	14	14	14
	CD31pos	Correlation Coefficient	.099	.213	.011
		Sig. (2-tailed)	.737	.464	.970
		N	14	14	14
	CD31pos51pos	Correlation Coefficient	-.015	-.266	.393
		Sig. (2-tailed)	.958	.358	.164
		N	14	14	14
	CD31pos51pos_54pos	Correlation Coefficient	-.305	-.310	-.152
	Sig. (2-tailed)	.288	.281	.605	
	N	14	14	14	
CD31neg54pos	Correlation Coefficient	-.152	.007	-.301	
	Sig. (2-tailed)	.605	.982	.296	
	N	14	14	14	
CD31neg51pos	Correlation Coefficient	.336	.231	.503	
	Sig. (2-tailed)	.240	.427	.067	
	N	14	14	14	
CD31neg51pos_54pos	Correlation Coefficient	.262	-.024	.191	
	Sig. (2-tailed)	.366	.935	.513	

. Correlation between iron MRI measures in SPMS

Correlations

			rednuc_total_tphase_ppb_mean	subnig_total_tphase_ppb_mean	pulvinar_total_tphase_ppb_mean
Spearman's rho	amyg_total_tphase_ppb_mean	N	13	14	14
	accu_total_tphase_ppb_mean	Correlation Coefficient	-.066	-.240	-.169
		Sig. (2-tailed)	.831	.409	.563
		N	13	14	14
	rednuc_total_tphase_ppb_mean	Correlation Coefficient	1.000	.538	.473
		Sig. (2-tailed)	.	.058	.103
		N	13	13	13
	subnig_total_tphase_ppb_mean	Correlation Coefficient	.538	1.000	.147
		Sig. (2-tailed)	.058	.	.615
		N	13	14	14
	pulvinar_total_tphase_ppb_mean	Correlation Coefficient	.473	.147	1.000
		Sig. (2-tailed)	.103	.615	.
		N	13	14	14
	CD31pos	Correlation Coefficient	.170	-.174	-.213
Sig. (2-tailed)		.578	.553	.464	
N		13	14	14	
CD31pos51pos	Correlation Coefficient	.357	.037	.424	
	Sig. (2-tailed)	.231	.899	.131	
	N	13	14	14	
CD31pos51pos_54pos	Correlation Coefficient	.357	.235	.371	
	Sig. (2-tailed)	.231	.418	.191	
	N	13	14	14	
CD31neg54pos	Correlation Coefficient	.000	-.200	.262	
	Sig. (2-tailed)	1.000	.493	.366	
	N	13	14	14	
CD31neg51pos	Correlation Coefficient	.225	.007	.371	
	Sig. (2-tailed)	.459	.982	.191	
	N	13	14	14	
CD31neg51pos_54pos	Correlation Coefficient	.126	-.196	.407	
	Sig. (2-tailed)	.681	.503	.149	

. Correlation between iron MRI measures in SPMS

Correlations

			CD31pos	CD31pos51pos	CD31pos51pos_54pos
Spearman's rho	amyg_total_tphase_ppb_mean	N	14	14	14
	accu_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.011 .970 14	.393 .164 14	-.152 .605 14
	rednuc_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.170 .578 13	.357 .231 13	.357 .231 13
	subnig_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	-.174 .553 14	.037 .899 14	.235 .418 14
	pulvinar_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	-.213 .464 14	.424 .131 14	.371 .191 14
	CD31pos	Correlation Coefficient Sig. (2-tailed) N	1.000 . 14	-.200 .493 14	-.284 .326 14
	CD31pos51pos	Correlation Coefficient Sig. (2-tailed) N	-.200 .493 14	1.000 . 14	.512 .061 14
	CD31pos51pos_54pos	Correlation Coefficient Sig. (2-tailed) N	-.284 .326 14	.512 .061 14	1.000 . 14
	CD31neg54pos	Correlation Coefficient Sig. (2-tailed) N	.055 .852 14	-.169 .563 14	.587* .027 14
	CD31neg51pos	Correlation Coefficient Sig. (2-tailed) N	.055 .852 14	.556* .039 14	.363 .203 14
	CD31neg51pos_54pos	Correlation Coefficient Sig. (2-tailed)	-.503 .067	.398 .159	.451 .106

*. Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in SPMS

Correlations

			CD31neg54pos	CD31neg51pos
Spearman's rho	amyg_total_tphase_ppb_mean	N	14	14
	accu_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	-.301 .296 14	.503 .067 14
	rednuc_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.000 1.000 13	.225 .459 13
	subnig_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	-.200 .493 14	.007 .982 14
	pulvinar_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.262 .366 14	.371 .191 14
	CD31pos	Correlation Coefficient Sig. (2-tailed) N	.055 .852 14	.055 .852 14
	CD31pos51pos	Correlation Coefficient Sig. (2-tailed) N	-.169 .563 14	.556* .039 14
	CD31pos51pos_54pos	Correlation Coefficient Sig. (2-tailed) N	.587* .027 14	.363 .203 14
	CD31neg54pos	Correlation Coefficient Sig. (2-tailed) N	1.000 . 14	.182 .533 14
	CD31neg51pos	Correlation Coefficient Sig. (2-tailed) N	.182 .533 14	1.000 . 14
	CD31neg51pos_54pos	Correlation Coefficient Sig. (2-tailed)	.358 .208	.437 .118

*. Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in SPMS

Correlations

			CD31neg51pos_54pos	CD31neg54pos2
Spearman's rho	amyg_total_tphase_ppb_mean	N	14	14
	accu_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.191 .513 14	.068 .817 14
	rednuc_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.126 .681 13	.341 .255 13
	subnig_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	-.196 .503 14	-.169 .563 14
	pulvinar_total_tphase_ppb_mean	Correlation Coefficient Sig. (2-tailed) N	.407 .149 14	.279 .334 14
	CD31pos	Correlation Coefficient Sig. (2-tailed) N	-.503 .067 14	-.270 .350 14
	CD31pos51pos	Correlation Coefficient Sig. (2-tailed) N	.398 .159 14	.182 .533 14
	CD31pos51pos_54pos	Correlation Coefficient Sig. (2-tailed) N	.451 .106 14	.565* .035 14
	CD31neg54pos	Correlation Coefficient Sig. (2-tailed) N	.358 .208 14	.578* .030 14
	CD31neg51pos	Correlation Coefficient Sig. (2-tailed) N	.437 .118 14	.407 .149 14
	CD31neg51pos_54pos	Correlation Coefficient Sig. (2-tailed)	1.000	.815** .000

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

. Correlation between iron MRI measures in SPMS

Correlations

			dgm_tphase_ppb_mean	wm_tphase_ppb_mean	caudate_total_tphase_ppb_mean
Spearman's rho	CD31neg51pos_54pos	N	14	14	14
	CD31neg54pos2	Correlation Coefficient	.090	.015	-.068
		Sig. (2-tailed)	.759	.958	.817
		N	14	14	14

Correlations

			putamen_total_tphase_ppb_mean	globus_total_tphase_ppb_mean	thal_total_tphase_ppb_mean
Spearman's rho	CD31neg51pos_54pos	N	14	14	14
	CD31neg54pos2	Correlation Coefficient	.081	.398	.204
		Sig. (2-tailed)	.782	.159	.483
		N	14	14	14

Correlations

			hipp_total_tphase_ppb_mean	amyg_total_tphase_ppb_mean	accu_total_tphase_ppb_mean
Spearman's rho	CD31neg51pos_54pos	N	14	14	14
	CD31neg54pos2	Correlation Coefficient	-.011	.055	.068
		Sig. (2-tailed)	.970	.852	.817
		N	14	14	14

. Correlation between iron MRI measures in SPMS

Correlations

			rednuc_total_tphase_ppb_mean	subnig_total_tphase_ppb_mean	pulvinar_total_tphase_ppb_mean
Spearman's rho	CD31neg51pos_54pos	N	13	14	14
	CD31neg54pos2	Correlation Coefficient	.341	-.169	.279
		Sig. (2-tailed)	.255	.563	.334
		N	13	14	14

Correlations

			CD31pos	CD31pos51pos	CD31pos51pos_54pos
Spearman's rho	CD31neg51pos_54pos	N	14	14	14
	CD31neg54pos2	Correlation Coefficient	-.270	.182	.565*
		Sig. (2-tailed)	.350	.533	.035
		N	14	14	14

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

			CD31neg54pos	CD31neg51pos
Spearman's rho	CD31neg51pos_54pos	N	14	14
	CD31neg54pos2	Correlation Coefficient	.578*	.407
		Sig. (2-tailed)	.030	.149
		N	14	14

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

			CD31neg51pos_54pos	CD31neg54pos2
Spearman's rho	CD31neg51pos_54pos	N	14	14
	CD31neg54pos2	Correlation Coefficient	.815**	1.000
		Sig. (2-tailed)	.000	.
		N	14	14

** . Correlation is significant at the 0.01 level (2-tailed).

PEM RESEARCH STUDY FOLLOW-UP SCHEDULE					
MS Subjects					
ID	Baseline	Month 1	Month 3	Month 6	Month 12
PEM001					
PEM002					
PEM003					
PEM004	7/12/2011	Skipped	10/13/2011	2/28/2012	7/12/2012
PEM005	7/12/2011	9/8/2011	10/12/2011	3/28/2012	7/12/2012
PEM006	8/1/2011	Skipped	10/12/2011	2/13/2012	8/1/2012
PEM007	10/26/2011		WITHDRAWN SMOKER		
PEM008	1/11/2012	2/8/2012	4/11/2012	7/11/2012	1/11/2013
PEM009	1/12/2012	2/12/2012	4/12/2012	7/12/2012	1/12/2013
PEM010	2/8/2012	3/8/2012	5/8/2012	8/8/2012	2/8/2013
PEM011	12/14/2011	1/20/2012	3/14/2012	6/14/2012	12/14/2012
PEM012	2/27/2012	3/27/2012	5/27/2012	8/27/2012	2/27/2013
PEM013	2/28/2012	3/28/2012	5/28/2012	8/28/2012	2/28/2013
Healthy Controls					
ID	Baseline	Completed?			
HC001	8/31/2011	YES			
HC002	8/31/2011	YES			