



The Virtual International Stroke Trials Archive



Annual Report May 2014

**VIRTUAL INTERNATIONAL STROKE TRIALS
ARCHIVE**

Update for the European Stroke Conference 2014

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VISTA-Acute

Update from the VISTA-Acute Chair



With 50 publications arising from VISTA-Acute analyses, and 53 publications overall, this section of the archive has been highly successful.

These manuscripts are also attracting citations and have featured in clinical guidelines.

However, there have been limited changes in the data available to VISTA-Acute over the last year and I had anticipated a gradual decline in analytic activity as a result. It seems, though, that the size and quality of the dataset has supported a continued trickle of applications and a very occasional enquiry from industry. Our challenge is to encourage younger researchers to use the data but at the same time to maintain quality of output. Journals will increasingly look at the output to assess if there is genuinely new material being presented or whether we are starting to scrape the bottom of the barrel. The steering committee may need to offer leadership on this, perhaps by being more robust in review of applications, perhaps by attracting novel ideas and data. Student projects can still be supported readily, and in principle there is no reason why the data - or a subset - may not be used for training purposes, i.e. projects could be recycled to more than one student **if students and supervisors accept that publication is not an option.**

Some of the additional VISTA-Acute data that are being sought at present overlap with VICCTA, and are primarily being sought under VICCTA leadership. The AF detection trial data are a good example.

Future directions for the acute datasets should be discussed by the executive. Financial viability of the arm may be limited without fresh data and projects.

Kennedy R. Lees,
May 2014

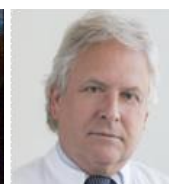
Founding Members:



K. R. Lees



P. Bath



H-C Diener



G. Donnan



M. Fisher



W. Hacke



N. G Wahlgren

Summary

30,320 Individual Anonymised Patient Records Available within VISTA-Acute

21 Ongoing Projects

50 Completed Projects

49 Peer-Reviewed Publications based on novel analyses

60 Abstracts Presented at Conferences

2 European Stroke Conference Young Investigator Awards

Steering Committee

K.R. Lees (Chair)	Institutes of Cardiovascular and Medical Sciences, University of Glasgow, UK
E. Bluhmki	Boehringer Ingelheim, Biberach, Germany
B. Gregson	Dept. of Neurosurgery, Newcastle University, Newcastle General Hospital, UK
G. Donnan,	Neurology, University of Melbourne, Australia
H. C. Diener	Department of Neurology, University Duisburg-Essen, Hufelandstrasse, Essen, Germany
J. Grotta	Department of Neurology, University of Texas, Houston Medical School, USA
J. Marler	Food and Drug Administration , USA
P. Teal	Professor of Stroke Neurology, University of British Columbia, Vancouver
M.G. Hennerici	Department of Neurology, University of Heidelberg, Germany
N.G. Wahlgren	Karolinska Hospital, Stockholm, Sweden
P. Lyden	Cedars-Sinai Medical Center, Los Angeles, USA
P.W. Bath	Institute of Neuroscience, University of Nottingham, UK
R. Sacco	Miller School of Medicine, University of Miami, USA

S.M Davis	Department of Neurology, Royal Melbourne Hospital, University of Melbourne, Australia
W. Hacke	Department of Neurology, University of Heidelberg, Germany
S. Warach	Department of Neurology and Neurotherapeutics, UT Southwestern Medical Center, Austin, TX
M. Fisher	Dept of Neurology, University of Massachusetts Medical School, USA
M. Hommel	Joseph Fourier University, Grenoble, France
M. Kaste	Department of Neurology, Helsinki University Central Hospital, University of Helsinki, Finland
K. Muir	Division of Clinical Neurosciences, University of Glasgow, Glasgow, UK
A. Shuaib	Director, Stroke Program, University of Alberta, Canada
C. Weimar	Department of Neurology, University Hospital Essen, University of Duisburg-Essen, Essen, Germany
A. Alexandrov	University of Alabama Hospital, Birmingham, AL, USA
N Bornstein	Professor of Neurology at the Tel-Aviv University, Sackler Faculty of Medicine, Israel
M. Ginsberg	Department of Neurology, University of Miami Miller School of Medicine, Miami, USA

Ongoing Research Titles

1. Early recurrent stroke in ischaemic stroke patients with atrial fibrillation (Abdul-Rahim et al)
2. Validating profiles of the NIHSS items as predictor of patients outcome using VISTA (Abdul-Rahim et al)
3. Impact of heart failure on outcome in thrombolysed patients with stroke (Abdul-Rahim et al)
4. Analysis of VISTA placebo data to seek evidence of trends over time (Davalos et al)
5. Validation of DASH II decision making analytic model (Ford et al)
6. Effect of Cigarette Smoking on Outcomes of Acute Ischemic Stroke Treated with Intravenous or Intra-arterial Thrombolysis: Is There Any Paradox in The Brain? (Hussein et al)
7. Medication burden and clinical outcomes early after acute stroke (Dawson et al)
8. Antithrombotic Therapy after Stroke (Dawson et al)
9. Patient outcomes following stroke according to baseline level of renal function (J. Lees et al)
10. Adverse event reporting in clinical trials of acute ischaemic stroke (Hesse et al)

11. Impact of Resting Heart Rate on Mortality and Morbidity After Acute Ischemic Stroke (Endres et al)
12. SITS SICH score (Mazya et al)
13. Study of effect of metabolic syndrome on ischaemic stroke outcomes (Saini et al)
14. Impact of beta-blockers on outcome in stroke patients: Evidence from VISTA (Sykora et al)
15. Extension and further validation of ASTRAL score's prognostic performance (Michel et al)
16. Exploration of case-control matching using historical controls for use in exploratory clinical trials: an evaluation using VISTA and SITS-East (Fulton et al)
17. A retrospective comparison between patients receiving autologous mononuclear bone marrow cells in stroke and matched VISTA controls (Kar et al)
18. Investigation of post-stroke spasticity (Wein et al)
19. Cost of stroke in Belgium (Thijs et al)
20. Validation of prognostic models for haemorrhagic and thrombotic events after stroke (Whiteley et al)
21. Quality of Life and Health Utilities at 3 Months after Acute Ischaemic Stroke (Ali et al)

Publications based on Novel Analyses

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13. Sare GM, Ali M, Shuaib A, Bath PMW, for the VISTA Collaboration. Hyperacute Blood pressure in acute ischaemic stroke. *Stroke* 2009; 40:2098-2103
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VISTA-Rehab

Update from the VISTA-Rehab Chair



Since its inception the profile of VISTA-Rehab's data archive has been distinct from that of other members of the VISTA family. Despite the generous contribution of 44 randomised controlled rehabilitation trials to the archive, the limited overlap in datasets constrained our original plans for utilizing these data.

However, bringing so many trials together into a single archive served to highlight the extent of these limitations. In turn this has generated papers which have communicated these methodological and reporting challenges. This has informed funding applications to encourage consistency across rehabilitation datasets and reporting criteria; this will in turn improve the relevance, reliability and transparency of stroke rehabilitation research.

We have continued to build the archive focusing our efforts and research funding applications on specific topic areas. Some of our topic-specific efforts have involved utilizing VISTA-Acute data sets. The European Cooperation in Science and Technology (COST) has also supported the development of an international network of aphasia trialists over the next four years. It currently supports members from across 21 countries many of whom have completed aphasia trials in the past.

Other methodological research led by Dr Chris Weir (University of Edinburgh), and funded by the Stroke Association (UK) will investigate approaches to meta-analyzing naturally skewed stroke rehabilitation data. Using VISTA-Rehab data he plans to investigate and evaluate different approaches to dealing with these statistically complex outcome variables.

Marian C. Brady

May 2014

Founding Members:



M. C. Brady



K. R. Lees



M. Walker



P. Langhorne



A. Pollock

Summary

10,768 Individual Anonymised Patient Records Available within VISTA-Rehab

44 Trials Contributed

11 Commitments to Contribute Data

2 Ongoing Projects

4 Peer-Reviewed Publications & Commentary Articles

20 Abstracts Presented at Conferences

Steering Committee

M.C. Brady (Chair)	NMAHP Research Unit, Glasgow Caledonian University, UK
M. Ali	NMAHP Research Unit, Glasgow Caledonian University, UK
A. Ashburn	School of Health Sciences, University of Southampton, UK
D. Barer	Stroke Research Team, Queen Elizabeth Hospital, Gateshead, UK
J. Bernhardt	The Florey Institute of Neuroscience and Mental Health, Heidelberg, Australia
A. Bowen	School of Psychological Sciences, University of Manchester, UK
E. Brodie	Department of Psychology, Glasgow Caledonian University, UK
S. Corr	Division of Occupational Therapy, University of Northampton, Northampton, UK
A. Drummond	Faculty of Medicine and Health Sciences, University of Nottingham, UK
J. Edmans	School of Community Health Sciences, University of Nottingham, UK
C. English	School of Health Sciences, University of South Australia, Australia.
J. Gladman	School of Community Health Sciences, University of Nottingham, UK
T. Hoffmann	Faculty of Health Sciences and Medicine, Bond University, Australia
L. Kalra	King's College London, London, UK

S. Kuys	Allied Health Research Collaborative, The Prince Charles Hospital, Queensland, Australia
P. Langhorne	Academic Section of Geriatric Medicine, Glasgow Royal Infirmary and Faculty of Medicine, University of Glasgow, UK
A.C. Laska	Danderyd Hospital, Stockholm, Sweden
K.R. Lees	Institutes of Cardiovascular and Medical Sciences, Faculty of Medicine, University of Glasgow, UK
N. Lincoln	Institute of Work, Health and Organisations, University of Nottingham, UK
P. Logan	School of Community Health Sciences, University of Nottingham, UK
L. Jongbloed	University of British Columbia, Canada
G. Mead	Clinical Sciences & Community Health, University of Edinburgh, UK
A. Pollock	NMAHP Research Unit, Glasgow Caledonian University, UK
V. Pomeroy	Health and Social Sciences Research Institute, University of East Anglia
H. Rodgers	Institute for Ageing and Health, Newcastle University, UK
C. Sackley	University of Birmingham, UK
L. Shaw	Institute for Ageing and Health, Newcastle University, UK
D.J. Stott	Academic Section of Geriatric Medicine, Glasgow Royal Infirmary, Glasgow UK.
K.S. Sunnerhagen	Section for Clinical Neuroscience and Rehabilitation, University of Gothenburg, Sweden
S. Tyson	Stroke & Vascular Research Centre, School of Nursing, Midwifery & Social Work, University of Manchester, UK
P. van Vliet	Division of Physiotherapy Education, School of Nursing, Midwifery and Physiotherapy, University of Nottingham
M. Walker	School of Community Health Sciences, University of Nottingham, UK
W. Whiteley	Department of Clinical Neurosciences, Western General Hospital, Edinburgh, UK

Ongoing Research Titles

1. Prevalence and Recovery from Post-Stroke Urinary Incontinence (Ali et al)

2. Practical methods for meta-analysis of continuous outcomes, with examples in stroke rehabilitation (Weir et al).

Publications

1. Ali M, Ashburn A, Bowen A, Brodie E, Corr S, Drummond A, Edmans J, Gladman J, Kalra L, Langhorne P, Lees KR, Lincoln N, Logan P, Mead G, Patchick E, Pollock A, Pomeroy V, Sackley C, Sunnerhagen KS, van Vliet P, Walker M, Brady M, On behalf of the VISTA-Rehab Investigators, VISTA-Rehab: A Resource for Stroke Rehabilitation Trials, International Journal of Stroke, 2010;5: 447–452.
2. Brady M, Reduce, Reuse, Recycle. International Journal of Stroke, 2010;5:421-2
3. Ali M, Hazelton C, Lyden P, Pollock A, Brady M, on behalf of the VISTA Collaboration, Recovery from Post-Stroke Visual Impairment: Evidence from a Clinical Trials Resource, JNNR 2013;27: 133-141
4. Ali M, English C, Bernhardt J, Sunnerhagen KS and Brady M on behalf of the VISTA-Rehab Collaboration. More Outcomes than Trials: A Call for Consistent Data Collection across Stroke Rehabilitation Trials. International Journal of Stroke, 2013; 8:18-24.
5. Ali M, More Outcomes than Trials: A Call for Consistent Data Collection across Stroke Rehabilitation Trials. International Journal of Stroke Podcast 2013, <https://itunes.apple.com/ua/podcast/rehabilitation-edition-international/id610378155>.

Future Directions

In the past year we have welcomed Prof. Anand Pandyan to the Steering Committee, along with the contribution of three trials on upper limb interventions after stroke.

VISTA-Protocols

Our experiences with VISTA-Rehab have highlighted a lack of detail in the descriptions of interventions in stroke rehabilitation trials in published papers. This hampers the replication and implementation of interventions that have been shown to be effective. As a result, many clinicians are unsure how to deliver interventions that are recommended in clinical guidelines.

Although some peer-reviewed journals now offer more space online to describe interventions, there is no single repository where interventions associated with peer-reviewed publications, are archived and accessible. We are now exploring the possibility of including such an archive under VISTA-Rehab. Initial preparatory work is underway. This includes an inventory of available protocols, CRFs, assessment guidelines and intervention descriptions within VISTA-Rehab. We will shortly begin contacting VISTA-Rehab trialists to encourage the contribution of more descriptive information on their trials, where required.

VISTA-ICH

Update from the VISTA-ICH Chair



In the past year we have welcomed the contribution of data from 5 trials, totaling 1,403 individual patients' data.

We currently have 12 ongoing research projects using data in VISTA-ICH and look forward to publication of at least 2 new papers based on these analyses in the coming months.

We have expanded our focus to include the collation of individual scan images which correspond to clinical data currently held within VISTA. To this end, we have collated scans from 4 trials, totaling 2,416 patients with intracerebral haemorrhage. We hope to make these images available for analysis through our collaborations with VISTA-Imaging.

Daniel F. Hanley

May 2014

Founding Members:



D. F. Hanley



S. Davis



K. R. Lees

Summary

3,232 Individual Anonymised Patient Records Available within VISTA-ICH

12 Ongoing Projects

5 Completed Projects

6 Peer-Reviewed Publications based on novel analyses

12 Abstracts Presented at Conferences

Steering Committee

K.R. Lees	Institutes of Cardiovascular and Medical Sciences, Faculty of Medicine, University of Glasgow, UK
D. Hanley	Division of Brain Injury Outcomes, The Johns Hopkins Medical Institutions, Baltimore, MD, USA
B. Gregson	Dept. of Neurosurgery, Newcastle University, Newcastle General Hospital, UK
P. Lyden	Cedars-Sinai Medical Center, Los Angeles, USA
K. Muir	Division of Clinical Neurosciences, University of Glasgow, Glasgow, UK
S. Mayer	Departments of Neurology and Neurosurgery, Columbia University College of Physicians and Surgeons, New York, USA
T. Steiner	Department of Neurology, University of Heidelberg, Germany
S. Davis	Department of Neurology, Royal Melbourne Hospital, University of Melbourne, Australia
K. Butcher	WMC Health Sciences Center, Edmonton, Alberta, Canada

Ongoing Research Titles

1. Cognitive outcome measures in ICH (Hajjar et al)
2. Characterisation of neurological deterioration after spontaneous ICH (Lord et al)
3. Edema volume as a predictor of neurological outcome following intracerebral hemorrhage (Kellner et al)
4. Statin use on ICH outcomes (McKinney et al)
5. ICH Prediction Modelling (Hajjar et al)
6. Biomarkers in ICH (Florczak-Rzepka et al)

7. Risk of acute sICH growth over time and its determinants: individual patient data meta-analysis (Salman et al)
8. Perihematoma oedema: a predictor of poor functional outcome on day 90 in ICH patients (Yip et al)
9. An ordinal decision tree model for predicting outcome following ICH (Phan et al)
10. Comparison of baseline characteristics and outcomes of patients with spontaneous intracerebral haemorrhage from different ethnic backgrounds (Krishnan et al)
11. Comparison of clinical outcomes following warfarin and antiplatelet associated intracerebral hemorrhage (W. Ziai)
12. Pfizer proof of concept study in ICH (D. Parsons-Rich)

Publications based on Novel Analyses

1. Weimar C, Ziegler A, Sacco RL, Diener HC, Ziegler A, Koenig IR on behalf of the VISTA Investigators. Predicting recovery after intracerebral hemorrhage – an external validation in patients from controlled clinical trials. *J Neurol.* 2009; 256:464–469
2. Dowlatshahi D, Demchuk A, Flaherty ML, Ali M, Lyden P, and Smith EE, on behalf of the VISTA Collaboration. Defining hematoma expansion in intracerebral hemorrhage: relationship with patient outcomes. *Neurology* 2011 (in Press).
3. Ali M, Hazelton C, Lyden P, Pollock A, Brady M, on behalf of the VISTA Collaboration, Recovery from Post-Stroke Visual Impairment: Evidence from a Clinical Trials Resource, *JNNR* 2013 Feb;27(2):133-141
4. Ali M, Lyden P, Sacco RL, Shuaib A, Lees KR, for the VISTA investigators. Natural History of Complications after Intracerebral Haemorrhage. *European Journal of Neurology*; 2009: 16:624-630
5. Rincon F, Lyden P, and Mayer SA, on Behalf of VISTA Collaboration. Relationship Between Temperature, Hematoma Growth, and Functional Outcome After Intracerebral Hemorrhage. *Neurocritical Care* 2012 (In Press).
6. Morgan TC, Dawson J, Spengler D, Lees KR, Aldrich C, Mishra NK, Lane L, Quinn TJ, Diener-West M, Weir CJ, Higgins P, Rafferty M, Kinsley K, Ziai W, Awad I, Walters MR, Hanley DF, for the CLEAR and VISTA Investigators. The Modified Graeb Score. An Enhanced Tool for Intraventricular Hemorrhage Measurement and Prediction of Functional Outcome. *Stroke* 2013; 44: 635-641.

Future Directions

Over the past year we have been working toward making scan images available for analysis. These scans will correspond to patient data already lodged within VISTA-ICH. We have collated scan images from 4 trials, totaling 2,416 patients with intracerebral haemorrhage. These images are currently undergoing checks to ensure anonymisation. A simple, accessible web based tool for determining data availability will be developed. These anonymised scans can then be accessed alongside clinical datasets for analyses.

VISTA-Prevention

Update from the VISTA-Prevention Chair



The contribution of trial data to VISTA-Preventions has been problematic. It is contingent on the PIs and commercial sponsors completing secondary analyses before formal contribution to VISTA.

Data contribution was secured from Boehringer Ingelheim and Sanofi Aventis (before 2011) for CAPRIE, CHARISMA, & MATCH. BMS initially took 18 months to sign the data transfer agreement. Meantime, all data were submitted to Ale Algra in 2010-11 to perform a pre-defined supplementary analysis as per the protocol. By the time approval was gained from BMS, the timeline specified in the contract with BI had expired; the lawyers who negotiated the first contract had left the company and the new contract took a further 9 months to be signed.

As it stands, Ale Algra has almost completed the meta-analysis of the anti-platelet trials. There is currently no date for anticipated contribution of these trial data to VISTA-Prevention, but we will follow up periodically.

In the past year we have welcomed data from the PRISM and VITATOPS trials. We are in ongoing negotiations to secure the contribution of data from VISP.

Initial focus has been to recruit data from antiplatelet trials. However efforts should now be made to recruit BP lowering trials, as per Philip Bath's suggestion in 2011.

Hans-Christoph Diener

May 2014

Founding Members:



H-C Diener



A. Algra



K. R. Lees

Summary

10,116 Individual Anonymised Patient Records Available within VISTA-Prevention

6 Commitments to Contribute Data

2 Expressions of Interest in Collaboration

6 Abstracts Presented at Conferences

Steering Committee

K.R. Lees	Institutes of Cardiovascular and Medical Sciences, Faculty of Medicine, University of Glasgow, UK
H.C. Diener	Department of Neurology, University Duisburg-Essen, Hufelandstrasse, Essen, Germany
S. Davis	Department of Neurology, Royal Melbourne Hospital, University of Melbourne, Australia
B. Ovbiagele	Department of Neurosciences, Medical University of South Carolina, USA
A. Algra	Utrecht Stroke Center, Department of Neurology, Rudolf Magnus Institute of Neuroscience and Julius Center for General Health Sciences and Primary Care, University Medical Center, Utrecht, Netherlands
G. Hankey	Stroke Unit, Department of Neurology, Royal Perth Hospital, Australia
C. Weir	Edinburgh Health Services Research Unit, Edinburgh University, UK

Future Directions

We await the results of additional analyses from 6 secondary prevention trials, after which these data are due to be contributed to VISTA-Prevention. We welcomed Dr. Chris Weir to the VISTA-Prevention Steering Committee, as well as the contribution of data from the PRISM trial.

VISTA-Plus

Update from the VISTA-Plus Chairs



Since 2013, we have welcomed the contribution of trial data from SITS-MOST and IST-1. The latter comprises data from 19,435 patients with acute ischaemic stroke. We welcomed Prof. Peter Sandercock and Dr. Maciej Niewada to the VISTA-Plus Steering Committee as the representatives of this trial and look forward to the development of new research proposals to make use of these data.



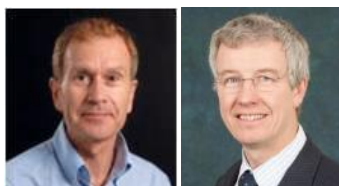
Our focus is now shifting towards facilitating novel exploratory analyses of VISTA-Plus data. We currently have 2 projects ongoing and we look forward to the publication of their findings.

As always, we continue to look for opportunities to expand the archive with the contribution of further data.

Nils-Gunnar Wahlgren & Christian Weimar

May 2014

Founding Members:



N.G. Wahlgren K.R. Lees

Summary

35,884 Individual Anonymised Patient Records Available within VISTA-Plus

1 Completed Project

2 Ongoing Projects

2 Expressions of Interest in Collaboration

7 Abstracts Presented at Conferences

Steering Committee

K.R. Lees	Institutes of Cardiovascular and Medical Sciences, Faculty of Medicine, University of Glasgow, UK
H. Numinnen	Department of Clinical Neuroscience, Helsinki University Central Hospital, Helsinki, Finland
G. Tsivgoulis	School of Medicine, Democritus University of Thrace, Greece
C. Molina	Department of Neuroscience, Hospital Universitari Vall d'Hebron, Barcelona, Spain
N.G. Wahlgren	Karolinska Hospital, Stockholm, Sweden
S. Warach	Department of Neurology and Neurotherapeutics, UT Southwestern Medical Center, Austin, TX
C. Weimar	Department of Neurology, University Hospital Essen, University of Duisburg-Essen, Essen, Germany
P. Sandercock	Department of Clinical Neurosciences, University of Edinburgh, Department of Clinical Neurosciences, Western General Hospital, Edinburgh, UK
M. Niewada	Department of Clinical and Experimental Pharmacology, Warsaw Medical University, Poland Department of Neurology, Institute of Psychiatry and Neurology, Warsaw, Poland

Ongoing Research Titles

1. Extension and further validation of ASTRAL score's prognostic performance (Michel et al)
2. The THRIVE score predicts symptomatic intracerebral hemorrhage after intravenous tPA administration in SITS-MOST (Flint et al)

VISTA-Imaging

Update from the VISTA-Imaging Chair



VISTA-Imaging continues to expand and facilitate new research projects. We look forward to the transfer of storage and coordination activities to Seton University Medical Centre in the next year.

Steven J. Warach

May 2014

Founding Members:



S.J. Warach M. Wintermark

Summary

450 Individual Anonymised Patients Available within VISTA-Imaging

12 Ongoing Projects

8 Completed Projects

10 Peer-Reviewed Publications based on novel analyses

9 Abstracts Presented at Conferences

Steering Committee

G. W. Albers	Department of Neurology, Stanford University School of Medicine, Stanford, CA, USA
S. M. Davis	Departments of Medicine and Neurology, Melbourne Brain Centre at the Royal Melbourne Hospital, University of Melbourne, Parkville, Victoria, Australia
G. A. Donnan	Department of Medicine, The Florey Institute of Neuroscience and Mental Health, Melbourne, Australia
M. Fisher	Department of Neurology, University of Massachusetts Medical School, Worcester, MA, USA
A. J. Furlan	Department of Neurology, University Hospitals Case Medical Center, Case Western Reserve University, Cleveland, OH, USA
J. C. Grotta	Department of Neurology, University of Texas Health Science Center, Houston, TX, USA
W. Hacke	Department of Neurology, University of Heidelberg, Heidelberg, Germany
D.W Kang	Department of Neurology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, South Korea
C. Kidwell	Department of Neurology and the Stroke Center, Georgetown University, Washington, DC, USA
W. Koroshetz	National Institute of Neurological Disorders and Stroke (NINDS), National Institutes of Health (NIH), Bethesda, MD, USA
K. R. Lees	Department of Medicine and Therapeutics, Institute of Cardiovascular and Medical Sciences, University of Glasgow, Western Infirmary, Glasgow, UK
M. H. Lev	Department of Radiology, Massachusetts General Hospital and Harvard Medical School, Boston, MA, USA
D. S. Liebeskind	Department of Neurology, UCLA Stroke Center, Los Angeles, CA, USA
A. G. Sorensen	Department of Radiology, Massachusetts General Hospital and Harvard Medical School, Boston, MA, USA

V. N. Thijs	Laboratory of Neurobiology, Vesalius Research Center, VIB, Experimental Neurology and Leuven Research Institute for Neuroscience and Disease (LIND), University of Leuven (KU Leuven), Department of Neurology, University Hospital Leuven, Leuven, Belgium
G. Thomalla	University Medical Center Hamburg, Eppendorf, Hamburg, Germany
S. J. Warach	Seton/UT Southwestern Clinical Research Institute of Austin, Department of Neurology and Neurotherapeutics, UT Southwestern Medical Center, Austin, TX, USA
J. M. Wardlaw	Department of Clinical Neurosciences, Brain Research Imaging Centre, Division of Neuroimaging Sciences, Centre for Clinical Brain Sciences, University of Edinburgh, Edinburgh, UK
M. Wintermark	Department of Radiology, Neuroradiology, University of Virginia, Charlottesville, VA & Department of Radiology, Centre Hospitalier Universitaire Vaudois (CHUV), Lausanne, Switzerland

Ongoing Research Titles

1. 4D modeling of the evolution of acute ischemic stroke lesions (Rekik et al)
2. Evaluation of MR-WITNESS and WAKE-UP imaging criteria on data of the PRE-FLAIR study (Thomalla et al)
3. Prediction Neural Net (Bagher-Ebadian et al)
4. Postprocessing DPMM (Leigh et al)
5. ACA digital map (Phan et al)
6. GLM (Wu et al)
7. IMAGER (Yoo et al)
8. PREDICT-A Natural History Study (Vagal et al)
9. Predicting malignant edema in large MCA infarct (Shang et al)
10. Development of Image Processing Tools (Warach et al)
11. Timing Stroke Onset using ADC, FLAIR, and PWI (Ford et al)
12. Association of Cerebral Blood Volume with Early FLAIR Hyper-intensity in Acute Ischemic Stroke (Nagaraja et al)

Publications

1. Thomalla G, Cheng B, Ebinger M, Hao Q, Tourdias T, Wu O, Kim JS, Breuer L, Singer OC, Warach S, Christensen S, Treszl A, Forkert ND, Galinovic I, Rosenkranz M, Engelhorn T, Köhrmann M, Endres M, Kang DW, Dousset V, Sorensen AG, Liebeskind DS, Fiebach JB, Fiehler J, Gerloff C; STIR and VISTA Imaging Investigators. DWI-FLAIR mismatch for the identification of patients with acute ischaemic stroke within 4·5 h of symptom onset (PRE-FLAIR): a multicentre observational study. *Lancet Neurol*. 2011 Nov;10(11):978-86.
2. Cheng B, Ebinger M, Kufner A, Köhrmann M, Wu O, Kang DW, Liebeskind D, Tourdias T, Singer OC, Christensen S, Warach S, Luby M, Fiebach JB, Fiehler J, Gerloff C, Thomalla G; Stroke Imaging Repository (STIR) Investigators. Hyperintense vessels on acute stroke fluid-attenuated inversion recovery imaging: associations with clinical and other MRI findings. *Stroke*. 2012 Nov;43(11):2957-61.

3. Kudo K, Christensen S, Sasaki M, Ostergaard L, Shirato H, Ogasawara K, Wintermark M, Warach S; For the Stroke Imaging Repository (STIR) Investigators, Accuracy and Reliability Assessment of CT and MR Perfusion Analysis Software Using a Digital Phantom. *Radiology*. 2012 267(1):201-11.
4. Cheng B, Brinkmann M, Forkert ND, Treszl A, Ebinger M, Köhrmann M, Wu O, Kang DW, Liebeskind DS, Tourdias T, Singer OC, Christensen S, Luby M, Warach S, Fiehler J, Fiebach JB, Gerloff C, Thomalla G, on behalf of the STIR and VISTA Imaging Investigators. Quantitative measurements of relative fluid-attenuated inversion recovery (FLAIR) signal intensities in acute stroke for the prediction of time from symptom onset. *J Cereb Blood Flow Metab*. 2013 Jan;33(1):76-84.
5. Scalzo F, Alger JR, Saver JL, Dani KA, Muir KW, Demchuk AM, Coutts SB, Luby M, Liebeskind DS, on behalf of the STIR and VISTA Imaging Investigators. Multi-center prediction of hemorrhagic transformation in acute ischemic stroke using permeability imaging features. *Magn Reson Imaging*. 2013 Jul;31(6):961-9.
6. Wintermark M, Warach SJ, on behalf of the STIR and VISTA Imaging Investigators. Acute stroke imaging research roadmap II and international survey of acute stroke imaging capabilities: we need your help! *AJNR* 2013 Sep;34(9):1671.
7. Wintermark M, Albers GW, Broderick JP, Demchuk AM, Fiebach JB, Fiehler J, Grotta JC, Houser G, Jovin TG, Lees KR, Lev MH, Liebeskind DS, Luby M, Muir KW, Parsons MW, von Kummer R, Wardlaw JM, Wu O, Yoo AJ, Alexandrov AV, Alger JR, Aviv RI, Bammer R, Baron JC, Calamante F, Campbell BC, Carpenter TC, Christensen S, Copen WA, Derdeyn CP, Haley EC Jr, Khatri P, Kudo K, Lansberg MG, Latour LL, Lee TY, Leigh R, Lin W, Lyden P, Mair G, Menon BK, Michel P, Mikulik R, Nogueira RG, Ostergaard L, Pedraza S, Riedel CH, Rowley HA, Sanelli PC, Sasaki M, Saver JL, Schaefer PW, Schellinger PD, Tsivgoulis G, Wechsler LR, White PM, Zaharchuk G, Zaidat OO, Davis SM, Donnan GA, Furlan AJ, Hacke W, Kang DW, Kidwell C, Thijs VN, Thomalla G, Warach SJ, on behalf of the STIR and VISTA Imaging Investigators. Acute Stroke Imaging Research Roadmap II. *Stroke*. 2013 Sep;44(9):2628-39.
8. Wintermark M, Albers GW, Broderick JP, Demchuk AM, Fiebach JB, Fiehler J, Grotta JC, Houser G, Jovin TG, Lees KR, Lev MH, Liebeskind DS, Luby M, Muir KW, Parsons MW, von Kummer R, Wardlaw JM, Wu O, Yoo AJ, Alexandrov AV, Alger JR, Aviv RI, Bammer R, Baron JC, Calamante F, Campbell BC, Carpenter TC, Christensen S, Copen WA, Derdeyn CP, Haley EC Jr, Khatri P, Kudo K, Lansberg MG, Latour LL, Lee TY, Leigh R, Lin W, Lyden P, Mair G, Menon BK, Michel P, Mikulik R, Nogueira RG, Ostergaard L, Pedraza S, Riedel CH, Rowley HA, Sanelli PC, Sasaki M, Saver JL, Schaefer PW, Schellinger PD, Tsivgoulis G, Wechsler LR, White PM, Zaharchuk G, Zaidat OO, Davis SM, Donnan GA, Furlan AJ, Hacke W, Kang DW, Kidwell C, Thijs VN, Thomalla G, Warach SJ, on behalf of the STIR and VISTA Imaging Investigators. Acute Stroke Imaging Research Roadmap II. *AJNR*. 2013 Sep;34(9):e113.
9. Artzi M, Aizenstein O, Jonas-Kimchi T, Bornstein N, Shopin L, Hallevi H, Ben Bashat D, on behalf of the STIR and VISTA Imaging Investigators Classification of Lesion Area in Stroke Patients During the Subacute Phase: A Multiparametric MRI Study. *Magn Reson Med*. 2013 Nov 14. DOI: 10.1002/mrm.25031
10. Leigh R, Jen SS, Hillis AE, Krakauer JW, Barker PB, on behalf of the STIR and VISTA Imaging Investigators. Pretreatment Blood Brain Barrier Damage and Post Treatment Intracranial Hemorrhage in Patients Receiving IV tPA. *Stroke*. 45:2030-2035

Future Directions

Transition of STIR\VISTA-Imaging to Seton (Austin, TX) from NIH\NINDS is near completion. The new website is <https://stir.seton.org>. We welcome the contribution of new trials and datasets to the resource. The DEFUSE investigators have committed to contributing DEFUSE to VISTA Imaging. Initial discussions of the draft TTST consensus statement, "How much imaging is needed for thrombolysis and thrombectomy, and for which patient?" began at ISC 2014 and are ongoing.

Discussions on the integration of VISTA-Imaging and VISTA-ICH are underway. The set fee structure was finalized at the last VISTA steering committee meeting. The fee structure has been implemented for all new projects.

VISTA-Endovascular

Update from the VISTA-Endovascular Chair



VISTA-Endovascular was launched in early 2013 as a repository for trials involving endovascular approaches to stroke treatment. We have been actively working to secure the contribution of trial data to this section of VISTA.

Our collaborators in academia and industry have indicated a willingness to contribute data. To date, we have secured commitments from the IMS-3, EXTEND-IA, BASICS, SWIFT, SWIFT Prime, ESCAPE, REVASCAT, RELIENT, DAWN and MR RESCUE trialists.

Dr. David Liebeskind has been appointed as the liaison between VISTA-Imaging and VISTA-Endovascular.

As with any VISTA section, trial contribution will take some time, however we anticipate that this resource will grow rapidly given the level of interest already ascertained.

Werner Hacke

May 2014

Founding Members:



W. Hacke



J. Broderick



H.C. Diener



J. Saver



P. Khatri



K.R. Lees

General VISTA Publications

1. Ali M, Bath PMW, Curram J, Davis SM, Diener HC, Donnan GA, Fisher M, Gregson BA, Grotta JC, Hacke W, Hennerici MG, Hommel M, Kaste M, Marler JR, Sacco R, Teal P, Wahlgren NG, Warach S, Weir CJ and Lees KR. The Virtual International Stroke Trials Archive. *Stroke* 2007;38:1905-1910.
2. Diener HC, Weimar C, Ali M, Lees KR, Die virtuelle internationale Schlaganfallstudien-Archiv (VISTA) – Bedeutung für die Schlaganfallforschung, *Akt Neurol* 2009;36:174-179
Weimar C, Ali M, Lees KR, Donnan GA, Diener HC, for the VISTA Steering Committee. The Virtual International Stroke Trials Archive (VISTA) – Results and impact on future stroke trials and management of stroke patients. *International Journal of Stroke* 2010; 5: 103-109.
3. Weimar C, Ali M, Lees KR, Donnan GA, Diener HC, for the VISTA Steering Committee. The Virtual International Stroke Trials Archive (VISTA) – Results and impact on future stroke trials and management of stroke patients. *International Journal of Stroke* 2010; 5: 103-109.
4. Ali M, Bath P, Brady M, Davis S, Diener H-C, Donnan G, Fisher M, Hacke W, Hanley DF, Luby M, Tsivgoulis G, Wahlgren N, Warach S, Lees KR, on behalf of the VISTA Steering Committees, Development, Expansion and Use of a Stroke Clinical Trials Resource for Novel Exploratory Analyses, *International Journal of Stroke* 2012;7: 133-138.

VICCTA

Update from the VICCTA Clinical Research Fellow



The **Virtual International Cardiovascular and Cognitive Archive (VICCTA)** follows the same principles as VISTA. VICCTA comprises six sub-sections; heart failure, ischaemic heart disease, atrial fibrillation, diabetes and metabolic, thrombo-embolism and cognition.

VICCTA so far holds international trial datasets with approximately 198,114 patients' data (Figure 1). We are working to attract new trials to all sub-sections of the archive but with extensive data already available, the archive is open to analysis proposals. The first projects are expected to present results in 2014. These include development and validation of various predictive models in heart failure population, and novel exploratory analysis.

With the support and guidance from VISTA steering committee, I hope that VICCTA may replicate VISTA's accomplishment in wider cardiovascular and cognition areas. However, VICCTA needs time to gain reputable international recognition. Hence, our focus for the up-coming year is to establish a visible presence within the scientific community, facilitating further collaborations for data gathering and data utilisation.

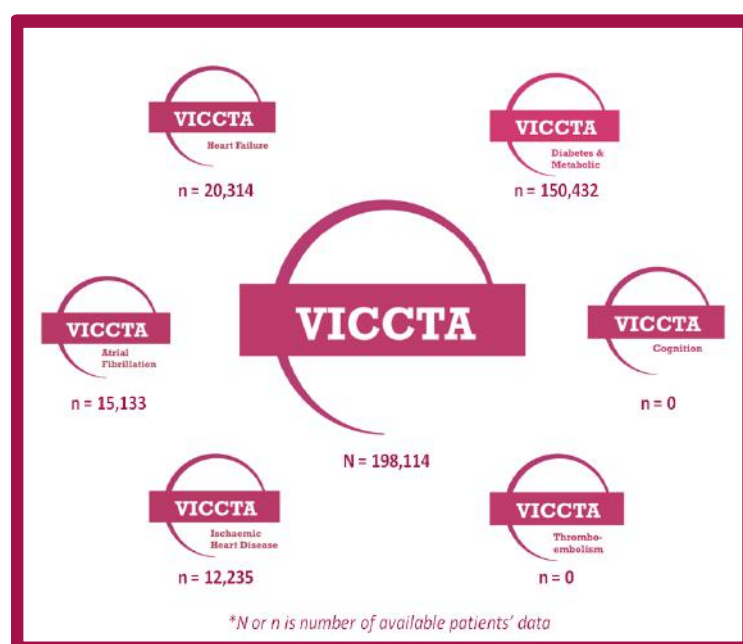


Figure 1: VICCTA and its sub-archives

The current members of the VICCTA steering committee are Azmil H. Abdul-Rahim, MRCP; David A Fitzmaurice, MD; Gregory YH Lip, MD; Jonathan Mant, MD; Barry R Davis, PhD; Albert L Waldo, MD; Colin Berry, MD; John JV McMurray, MD; John R Petrie, PhD; Naveed Sattar, PhD; Gordon D Lowe, MD, DSc; Matthias Herz, MD and Kennedy R. Lees, MD, FRCP (Chair).

Azmil Abdul-Rahim

May 2014

Summary

198,114 Individual Anonymised Patient Records Available within VICCTA

3 Ongoing Projects

2 Abstracts Presented at Conferences

Steering Committee

K. R. Lees.	Institutes of Cardiovascular and Medical Sciences, Faculty of Medicine, University of Glasgow, UK
Barry Davis	The University of Texas School of Public Health, Texas, USA
Albert Waldo	Case Western Reserve University School of Medicine, Cleveland, Ohio, USA
Colin Berry	Institutes of Cardiovascular and Medical Sciences, University of Glasgow, UK
Matthias Herz	F. Hoffmann-La Roche, Switzerland
Azmil AbdulRahim	VICCTA Clinical Research Fellow, University of Glasgow, UK
John McMurray	Institutes of Cardiovascular and Medical Sciences, Faculty of Medicine, University of Glasgow, UK
John Petrie	Institutes of Cardiovascular and Medical Sciences, University of Glasgow, UK
Naveed Sattar	Institutes of Cardiovascular and Medical Sciences, University of Glasgow, UK
Gordon Lowe	Institutes of Cardiovascular and Medical Sciences, University of Glasgow, UK
David Fitzmaurice	Primary Care Clinical Sciences, University of Birmingham, UK
Jonathan Mant	Primary Care Unit, University of Cambridge, UK
Gregory Lip	University of Birmingham Centre for Cardiovascular Sciences, Birmingham, UK

Ongoing Research Titles

1. Associations of Baseline BP with MI and Stroke in Chronic Heart Failure Patients with Sinus Rhythm (Abdul-Rahim et al)
2. Risk and Predictors of Stroke in Heart Failure with Reduced Ejection Fraction Patients (Abdul-Rahim et al)
3. Validation of multivariate model of predictors of heart failure hospitalization and mortality (Lowrie et al)

Contact Details

Websites

VISTA: www.vistacollaboration.org

VICCTA www.viccta.org

VISTA Imaging: <https://stir.seton.org>

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Prevention: vista.prevention@glasgow.ac.uk

Plus: vista.plus@glasgow.ac.uk

Endovascular: vista.endovascular@glasgow.ac.uk

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Coordinator: vista.collaboration@glasgow.ac.uk / Myzoon.ali@glasgow.ac.uk

Statistician: Rachael.fulton@glasgow.ac.uk

VICCTA Fellow: Azmil.Abdul-Rahim@glasgow.ac.uk



Virtual International Stroke trials Archive
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