Late-Breaking Science Oral Abstracts

Thursday, February 12, 2015, 10:30 am - 12:05 pm

LATE-BREAKING SCIENCE abstracts/studies presented at the INTERNATIONAL STROKE CONFERENCE 2015:

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Presentation Number: LB3

Publishing Title: Cervical Artery Dissection in Stroke Study (CADISS)

Author Block: Hugh S Markus, Univ of Cambridge, Cambridge, United Kingdom; CADISS Investigators

Abstract Body: Carotid and vertebral artery dissection is an important cause of stroke particularly in the young. It has been associated with a high rate of early recurrent stroke. The mechanism of stroke is believed to be primarily thromboembolic and both anticoagulants and antiplatelet agents are used in stroke prevention. There is no data from randomised controlled trials comparing the two drug treatments.
The Cervical Artery Dissection in Stroke Study (CADISS) (http://www.dissection.co.uk/) aimed to recruit 250 patients with extracranial carotid and vertebral dissection and recent symptoms (within 7 days). Patients were randomised between antiplatelet therapy (AP) or anticoagulants (AC) for 3 months. The primary endpoint was recurrent stroke and death at 3 months, but follow-up data was collected to 12 months.
250 patients were recruited from 46 centres in 2 countries (UK and Australia). 126 were randomised to AP and 124 to AC. Mean age was 49.4 years in the AP group and 49.2 in the AC group, and the two groups were well matched for gender and risk factors. The arterial territory was carotid in 47% and vertebral in 53%. Follow-up was complete in all cases.
The results including follow-up until 12 months will be presented.
ISTRCTN number: ISRCTN44555237

Author Disclosure Block: H.S. Markus: Research Grant; Significant; the CADISS study was funded by a research grant from the Stroke Association, the CADISS study was funded by a research grant from the Stroke Association, the CADISS study was funded by a research grant from the Stroke Association. Other Research Support; Significant; NIHR Stroke Research Network.

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Presentation Number: LB4

Publishing Title: Pooled Analysis Of The IMS III And MR CLEAN Trials For Patients With NIHSS Of 20 Or More

Author Block: Joseph Broderick, Univ of Cincinnati, Cincinnati, OH; Diederik W Dippel, Erasmus MC Univ Medical Ctr, Rotterdam, Netherlands; Yuko Y. Palesch, Medical Univ of South Carolina, Charleston, SC; Aad van der Lugt, Erasmus MC Univ Medical Ctr, Rotterdam, Netherlands; Thomas A Tomsick, Univ of Cincinnati, Cincinnati, OH; Wim van Zwam, Maastricht Univ Medical Ctr, Maastricht, Netherlands; Andrew M. Demchuck, Univ of Calgary, Calgary, AB, Canada; Robert J van Oostenbrugge, Maastricht Univ Medical Ctr, Maastricht, Netherlands; Pooja Khatri, Univ of Cincinnati, Cincinnati, OH; Charles B. Majoie, Academic Medical Ctr, Amsterdam, Netherlands; Lydia D. Foster, Medical Univ of South Carolina, Charleston, SC; Yvo BWEM Roos, Academic Medical Ctr, Amsterdam, Netherlands; For the IMS III and MR CLEAN Trial Investigators

Abstract Body: Objective: To assess the effect of endovascular treatment for acute ischemic stroke in patients with NIHSS>=20, in a planned pooled analysis of the IMS III and MR CLEAN Trial data. Previous analyses of IMS III data suggested the possibility of a benefit of treatment for this subgroup with severe stroke treated with IV t-PA within 3 hours of onset.
Methods: The pooled analyses includes all subjects of both trials treated with IV t-PA within 3 hours of onset with a score of 20 or more on the NIH stroke scale. This subgroup was prespecified before breaking the blind of MR CLEAN. The primary outcome is the score on the modified Rankin Sale and the effect of treatment is measured with ordinal logistic regression with adjustment for covariates (NIHSS, age, previous stroke, diabetes, atrial fibrillation and carotid terminus occlusion).
Results: In total, 148 subjects from MR CLEAN and 195 from IMS III are included in this pooled analysis. The two arms were well balanced. Baseline characteristics are presented in the table.
Conclusions: MR CLEAN demonstrated a significant benefit in the mRS for endovascular plus standard therapy as compared to standard therapy alone within 6 hours of onset. Analyses are ongoing as the MR CLEAN results will be published by end of November. Results of this pooled analysis of IMS III and MR CLEAN will be presented at the conference.

	IMS III n=195		MR CLEAN n=148		Pooled n=343	
	Endovasc N=127	Control N=68	endovasc	control	Endovasc	control
Age (med, IQR)	72 (60-77)	73 (63-78)	67 (52-79)	66 (60-76)	To be presented	To be presented
Male sex (n, %)	66 (52%)	33 (49%)	37 (58%)	56 (67%)		
NIHSS (med, IQR)	23 (21-25)	22 (21-24)	22 (21 – 25)	23 (21-25)		
Previous stroke (n, %)	17 (13%)	13 (19%)	4 (6%)	6 (7%)		
Diabetes (n, %)	30 (24%)	16 (24%)	11 (13%)	11 (17%)		
Atrial fib (n, %)	59 (46%)	25 (37%)	18 (28%)	17 (20%)		
Carotid T* (n, %)	20 (35%)	9 (31%)	22 (34%)	27 (32%)		
Time to rand, min (med, IQR)	137 (117-172)	134 (114-165)	197 (166-241)	186 (138-247)		
Time to IAT, min (med, IQR)	255 (210-290)	-	255 (215-304)	-		

*Denominator for percentages is subjects with a baseline CTA (endovascular n=57, control n=29)

Author Disclosure Block: J. Broderick: Research Grant; Modest; PRISMS Trial - Genentech. Honoraria; Modest; Boehringer Ingelheim. Consultant/Advisory Board; Modest; Pfizer. Other Research Support; Significant; Study medication for IMS III Trial Genentech. **D.W.J. Dippel:** Research Grant; Significant; Dutch

Heart Foundation. Other Research Support; Significant; unrestricted grants from AngioCare BV, Covidien/EV3®, MEDAC Gmbh/LAMEPRO and Penumbra Inc. **Y.Y. Palesch:** Research Grant; Significant; research monies to her department for her role as DSMB member for the Biogen and Brainsgate trials. **A. van der Lugt:** None. **T.A. Tomsick:** None. **W. van Zwam:** None. **A.M. Demchuck:** Research Grant; Significant; Unrestricted grant to support the ESCAPE trial from Covidien.. Honoraria; Modest; honoraria for CME from Covidien. **R.J. van Oostenbrugge:** None. **P. Khatri:** Other Research Support; Significant; Research support from Genentech, Inc for her role as Lead PI of the PRISMS trial, Penumbra, Inc. for her role as Neurology PI of the THERAPY trial, and Biogen, as DSMB member. **C.B. Majoie:** None. **L.D. Foster:** None. **Y.B. Roos:** None.

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Presentation Number: LB5

Publishing Title: Mediterranean Diet and Incidence of Stroke in the California Teachers Study

Author Block: Ayesha Z Sherzai, Columbia Univ, New York, NY; Huiyan Ma, City of Hope, Duarte, CA; Pamela Horn-Ross, Alison Canchola, Cancer Prevention Inst of California, Fremont, CA; Jenna Voutsinas, City of Hope, Duarte, CA; Joshua Z Willey, Yian Gu, Nikolaos Scarmeas, Columbia Univ, New York, NY; Dean Sherzai, Cedars Sinai Medical Ctr, Los Angeles, CA; Leslie Bernstein, City of Hope, Duarte, CA; Mitchell S Elkind, Columbia Univ, New York, NY; Sophia Wang, City of Hope, Duarte, CA

Abstract Body: Introduction
Mediterranean diet (MeDi) has been linked to reduced incidence of cardiovascular and neurodegenerative diseases, and overall mortality, in several prospective studies. There is limited data, however, regarding the relationship between MeDi and stroke and its subtypes. We hypothesized that MeDi would be associated with reduced total, ischemic, and hemorrhagic stroke incidence.
Methods
The California Teachers Study comprises 133,478 women educators enrolled in 1995 and continuously followed since. Using linked California state hospitalization data and national death records from 1996-2011, incident strokes were identified and validated. Socio-demographic and medical risk factor data were collected from the baseline questionnaire. Diet was assessed using a food-frequency questionnaire. We used the MeDi adherence score, a validated 9 point scale. A higher score represents increased adherence. Multivariable Cox proportional hazard models adjusted for socio-demographic variables, moderate-to-strenuous physical activity, total calorie intake, body mass index, cigarette smoking, menopausal/hormonal status and vascular risk factors were used to assess the association (hazard ratios and 95% confidence intervals, HR 95% CI) between MeDi score and risk of stroke and its subtypes.
Results
For the analysis, 104,268 participants were eligible (mean age 52 ± 13.9 years, 87.4% white, 4.6% Hispanic, 3.2% Asian, 2.1% black). The MeDi score distribution was 0-2 (16.1%), 3 (18.2%), 4 (21.4%), 5 (20.1%), and 6-9 (24.3%). During follow-up, 3165 stroke events occurred (2270 ischemic; 895 hemorrhagic). In the multivariable model, compared to those in the lowest MeDi score quintile (score 0-2), those in the fourth quintile (score 5: HR 0.86, 95% CI 0.75-0.98) and highest quintiles (score 6 - 9: HR 0.83, 95% CI 0.73-0.95) were at lower risk of stroke (p for trend 0.009). For ischemic stroke, those in the third (HR 0.84, 95% CI 0.72-0.97), fourth (0.85, 95% CI 0.73-0.98), and highest quintiles (HR 0.82, 95% CI 0.70-0.95) were all at reduced risk (p for trend 0.02). There was no association with hemorrhagic stroke.
Discussion
Adherence to the Mediterranean diet is associated with decreased risk of total and ischemic stroke incidence among women.

Author Disclosure Block: A.Z. Sherzai: None. **H. Ma:** None. **P. Horn-Ross:** None. **A. Canchola:** None. **J. Voutsinas:** None. **J.Z. Willey:** None. **Y. Gu:** None. **N. Scarmeas:** None. **D. Sherzai:** None. **L. Bernstein:** None. **M.S.V. Elkind:** None. **S. Wang:** None.

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Presentation Number: LB6

Publishing Title: Effects of Immediate Blood Pressure Reduction on One Year Mortality and Major Disability in Patients with Acute Ischemic Stroke

Author Block: Jiang He, TULANE UNIVERSITY, New Orleans, LA; Yonghong Zhang, Tan Xu, Soochow Univ, Suzhou, China; Dali Wang, Hebei United Univ, Hebei, China; Yingxian Sun, China Medical Univ, Liaoning, China; Chung-Shiuan Chen, Jing Chen, TULANE UNIVERSITY, New Orleans, LA; for the CATIS investigators

Abstract Body: Introduction Although elevated blood pressure (BP) is very common in patients with acute ischemic stroke, the management of hypertension among them remains controversial.
Hypothesis We tested the effect of immediate BP reduction on one year mortality and major disability in acute ischemic stroke patients.
Methods The China Antihypertensive Trial in Acute Ischemic Stroke, a randomized, single-blind, blinded end-points trial, was conducted in 4,071 patients with ischemic stroke within 48 hours of onset and elevated systolic BP (SBP). Patients were randomly assigned to receive antihypertensive treatment (N=2,038) or to discontinue all antihypertensive medications (N=2,033) during hospitalization. Post-treatment follow-ups were conducted at 3 and 12 months after hospital discharge. The primary outcome was a composite of death and major disability at 12 months follow-up.
Results Mean SBP was reduced 12.7% in the antihypertensive treatment group and 7.2% in the control group within 24 hours after randomization (P<0.001). Mean SBP was 137.3 mmHg in the antihypertensive treatment group and 146.5 in the control group at day 7 after randomization (P<0.001). At 12 months follow-up, study outcomes were obtained in 96.1% of participants. 79.9% of the patients in the antihypertensive treatment group and 73.3% in the control group reported the use of antihypertensive medications (P<0.001). SBP was 138.8 mmHg in the antihypertensive treatment group and 140.2 in the control group (P<0.001). Among patients in the antihypertensive treatment group, 23.1% (453/1965) died or had a major disability, compared with 21.0% (410/1949) in the control group (odd ratio 1.12 [95% CI 0.97 to 1.31], P=0.13). Hazard ratios for all-cause mortality (1.13 [0.87 to 1.47], P=0.35), recurrent stroke (0.97 [0.73 to 1.28], P=0.80), and vascular events (0.96 [0.74 to 1.24], P=0.76) were not statistically significant comparing the antihypertensive treatment group to the control group. The effect of antihypertensive treatment did not differ by pre-defined subgroups (all P>0.34).
Conclusions Among patients with acute ischemic stroke, BP reduction with antihypertensive medications during hospitalization did not reduce the composite outcome of death and major disability in one year.

Author Disclosure Block: J. He: None. **Y. Zhang:** None. **T. Xu:** None. **D. Wang:** None. **Y. Sun:** None. **C. Chen:** None. **J. Chen:** None.

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Presentation Number: LB7

Publishing Title: Endovascular Treatment Compared With Medical Treatment in Patients with Acute Ischemic Stroke: A meta-analysis of 1561 patients

Author Block: Adnan I Qureshi, Morad Chughtai, Ahmed A. Malik, Zeenat Qureshi Stroke Insitute, St Cloud, MN

Abstract Body: OBJECTIVE: Endovascular treatment for acute ischemic stroke is an integral item for comprehensive stroke centers. Randomized trials have evaluated the comparative efficacy of endovascular treatment with medical treatment; definitive evidence is lacking due to varying results.
METHODS: A search was made for randomized clinical trials comparing endovascular treatment with medical treatment including intravenous thrombolysis for acute ischemic stroke.. A meta-analysis was performed Outcomes compared included 3-month rates of survival, independent functional status (defined by modified Rankin scale of 0-2), and post-treatment intracerebral hemorrhage resulting in clinical deterioration.
RESULTS: We analyzed seven randomized trials totaling 1561 patients (821 randomized to endovascular and 740 to conventional treatment). The end point of 3-month independent functional status was significantly different between patients treated with endovascular treatment versus those treated with medical treatment (1509 patients analyzed; relative risk [RR], 1.3; 95% confidence interval [CI], 1.1-1.6; P = 0.002). The 3-month survival rate (1462 patients analyzed: RR, 0.9; 95% CI, 0.8-1.1; P = 0.3) was similar for endovascular treatment versus medical treatment. The post-treatment intracerebral hemorrhage rate was similar between endovascular and medical treatments (831 patients analyzed: RR, 0.8; 95% CI, 0.5-1.3; P = 0.4). In patients with initial National Institutes of Health Stroke scale (NIHSS) score of 17 or greater, endovascular treatment was superior to medical treatment in regards to rates of independent functional status within 3 months (708 patients analyzed: RR, 1.5; 95% CI, 1.1-2.2; P=0.02).
CONCLUSION: The 3-month survival rates in patients treated with endovascular treatment and those treated with medical treatment were not significantly different. The 3-month independent functional status rates in patients treated with endovascular and those treated with medical treatment were significantly different. Among patients with initial NIHSS score ≥17, there was a significantly higher rate of independent functional status among patients randomized to endovascular treatment suggesting a benefit in selected groups of patients.

Author Disclosure Block: A.I. Qureshi: None. **M. Chughtai:** None. **A.A. Malik:** None.

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Presentation Number: LB18

Publishing Title: Time To Reperfusion And Effect Of Intra-arterial Treatment In The Mr Clean Trial.

Author Block: Puck S Fransen, Erasmus MC Univ Medical Ctr Rotterdam, Rotterdam, Netherlands; Olvert A Berkhemer, Erasmus medical center Rotterdam, Academic Medical Ctr, Amsterdam, Rotterdam, Amsterdam, Netherlands; Debbie Beumer, Maastricht Univ Medical Ctr, Maastricht, Netherlands; Lucie A van den Berg, Academic Medical Ctr, Amsterdam, Netherlands; Hester Lingsma, Erasmus MC Univ Medical Ctr Rotterdam, Rotterdam, Netherlands; Wim van Zwam, Maastricht Univ Medical Ctr, Maastricht, Netherlands; Yvo B Roos, Academic Medical Ctr, Amsterdam, Netherlands; Aad van der Lugt, Aad van der Lugt, Erasmus MC Univ Medical Ctr Rotterdam, Rotterdam, Netherlands; Robert J van Oostenbrugge, Maastricht Univ Medical Ctr, Maastricht, Netherlands; Charles B Majoie, Academic Medical Ctr, Amsterdam, Netherlands; Diederik W Dippel, Erasmus MC Univ Medical Ctr Rotterdam, Rotterdam, Netherlands

Abstract Body: Introduction
MR CLEAN was a randomized controlled trial of intra-arterial treatment (IAT) versus standard care in patients with acute ischemic stroke patients with a proximal intracranial anterior circulation occlusion who could be treated within 6 hours. Intervention resulted in a shift in the modified Rankin Scale (mRS) distribution, with 14% (95% CI: 6%-21%) more patients being independent. In the present study we examine the interaction of treatment effect with time from onset to reperfusion (TOR).
Methods
All 500 trial patients were included in this analysis. TOR was defined as time to mTICI 2b or 3 or end of procedure. We imputed TOR in the control group based on time to randomization. Clinical characteristics were examined by treatment allocation for each tertile of TOR. In the analysis, we used multiple ordinal logistic regression analysis to estimate the effect of treatment as an adjusted common odds ratio and to test for interaction of TOR with treatment effect. We also computed the absolute effect of treatment (risk difference, RD) on reaching independence (mRS 0-2).
Results
Baseline characteristics did not differ between tertiles. The overall adjusted common odds ratio was 1.67 (95% CI: 1.21-2.30). The absolute effect of treatment was largest in patients with TOR less than 5 hours, and approached unity in the third tertile, beyond 6 hours (Table). The interaction between TOR and treatment effect was statistically significant (P; 0.009).
Conclusion
Patients with reperfusion after 6 hours likely do not benefit from intra-arterial treatment. The effect of treatment is stronger and chances of reaching independence are better when patients reach reperfusion earlier.

Author Disclosure Block: P.S.S. Fransen: None. **O.A. Berkhemer:** None. **D. Beumer:** None. **L.A. van den Berg:** None. **H. Lingsma:** None. **W. van Zwam:** None. **Y.B. Roos:** None. **A. van der Lugt:** None. **A. van der Lugt:** None. **R.J. van Oostenbrugge:** None. **C.B. Majoie:** None. **D.W. Dippel:** None.