

ALLIANCE TO CURE

CAVERNOUS MALFORMATION



20th Anniversary Alliance to Cure Cavernous Malformation International CCM Scientific Meeting

SickKids Hospital Peter Gilgan Centre for Research and Learning
Toronto, Ontario, Canada

Day 1 - Thursday, July 25th

8:00 WELCOME

Amy Akers - Alliance to Cure Cavernous Malformation

Session I - Disease Outcomes, Natural History, Patient Experience & Animal Behavior

Moderated by Rustam Al-Shahi Salman

8:05 *Economic and Family Impact of Pediatric Neurovascular Surgery: Quantitative Study of Parent Experiences*

Sandi Lam - Northwestern University

8:25 *Hemorrhagic Outcome of Brainstem Cavernous Malformations Following Radiosurgery: Dose-Response Relationship*

Da Li - Beijing Tiantan Hospital, Capital Medical University

8:45 *Somatic MAP3K3 mutation defines a subclass of cerebral cavernous malformations*

Jiancong Weng - China-Japan Friendship Hospital

9:05 *Mechanisms of CCM Immuno-thrombosis and Behavioral Impairments in Mice with Cerebral Cavernous Malformation Disease*

Miguel Alejandro Lopez-Ramirez - University of California at San Diego

9:25 *Contemporary Cohort of Cerebral Cavernous Malformation: Natural History and Utility of Follow-Up MRI*

Kelly Flemming - Mayo Clinic

9:45 *Progress Update on CASH Consortium Projects: CASH TR, AT CASH EPOC and CASH Biomarkers*

Issam Awad - University of Chicago

10:05 DISCUSSION

10:25 BREAK

10:45 *Simple Science Sessions - Connecting the Scientific and Patient Communities*

Andrew Ressler - Duke University

Session II - Biomarkers

Moderated by Helen Kim

11:00 *CCM Plasma Biomarkers*

Shantel Weinsheimer - University of California at San Francisco

11:20 *Shared and Distinct Circulating microRNomes in Familial Cerebral Cavernous Malformations, Sturge-Weber Syndrome, Hereditary Hemorrhagic Telangiectasia with Brain Arteriovenous Malformations, and Cerebral Microbleeds*

Janne Koskimaki - University of Chicago

11:40 *Changes in Plasma Proteins and Metabolites Reflect Changes in Lesional Iron Content and Permeability Imaging in Prospective Follow-up of Cerebral Cavernous Malformations with Symptomatic Hemorrhage*

Romuald Girard - University of Chicago

12:00 *A Comparative Study of Circulating microRNAs in Human and Mouse Cerebral Microbleeds*

Carolyn Bennett - University of Chicago

12:20 DISCUSSION

12:40 Lunch

Session III - Preclinical Treatment Testing & Clinical Trials

Moderated by Ed Smith

1:40 *Pre-Clinical Treatment Testing Initiative & Updates*

Amy Akers & Connie Lee - Alliance to Cure

2:00 *Except for Robust Outliers, Rapamycin Increases Lesion Burden in a Murine Model of Cerebral Cavernous Malformations*

Roberto Alcazar - University of Chicago

2:20 *Feasibility of comparing medical management and surgery (using neurosurgical resection of stereotactic radiosurgery) with medical management alone for people with symptomatic cerebral cavernous malformation (CARE): a randomized, open, parallel-group, pragmatic, pilot phase trial*

Rustam Al-Shahi Salman - University of Edinburgh

2:40 *Cerebral cavernous malformations in children - genetic testing and principles of medical management*

Ionela Iacobas - Texas Children's Hospital

3:00 *ROCK2 Inhibition: Multi-Mechanism Approach to Restoring Cell Health in CCM*

Amy Melsaether - Graviton Bioscience Corp

3:20 DISCUSSION

3:40 GROUP PHOTO

4:00 POSTER SESSION & RECEPTION

Academic Posters

Unraveling Cerebral Cavernous Malformation Pathogenesis: Insights from a Radiation-Induced Endothelial Dysmorphism Model

Roberto Alcazar-Felix - University of Chicago

Artificial Intelligence for Diagnostic and Prognostic Associations of Cerebral Cavernous Malformation Hemorrhage Using Quantitative Susceptibility Mapping (QSM) Features

Serena Kinkade - University of Chicago

kri-1 and ccm-3 converge on pmk-3 signaling and the mediator complex to maintain viability in Caenorhabditis elegans

Samuel Krempel - University of Toronto

Animal model of familial cerebral cavernous malformation due to the common Hispanic mutations (c.1363C>T; p.Q455X)

Rhodalyne Essien - University of Rochester

The Ccm3-GekIII signaling axis regulates Rab11-dependent recycling to the apical compartment

Amin Ghabrial - Columbia University

Multiple Cerebral Giant Cavernous Malformations in a Pediatric Patient: a case report and review of literature

Sandi Lam - Northwestern University

Social and Economic Impacts of Pediatric Neurovascular Surgery: A qualitative study of parent experiences

Sandi Lam - Northwestern University

Somatic CNVs in oncogenic and vascular malformation genes enriched in Cerebral Cavernous Malformations.

Andrew Ressler - Duke University

Patient & Caregiver Posters

My CCM Journey

presented by:

Darcy Ayers
Andrew Banks
Alma Clayton
Linda Fuchser
Kristin Larissa Gour

Julia Lee
David Meyer
Ross O'Dea
Elan Ramirez
Linnea Winchester

7:00 DINNER

Lavelle, 627 King St W (a 40-minute walk)

Day 2 - Friday, July 26th

8:30 WELCOME

8:40 Keynote Address to Patients, Families, and Investigators

Introduction by Doug Marchuk

From the worm to the brain - a twisted journey to understand and treat cerebral cavernous malformation

W. Brent Derry - SickKids Hospital

9:40 Break with Family Conference Attendees

Session IV - Animal Models & Preclinical Treatment

Moderated by Doug Marchuk

10:00 Intravital imaging of disease mechanisms in a mouse model of CCM skin lesions

Konstantin Gaengel - Uppsala University

10:20 GNA14 and GNAQ somatic mutations cause spinal and intracranial extra-axial cavernous hemangiomas treatable with an mTOR inhibitor

Jian Ren - Xuan Hospital

10:40 *Epicardial CCM2 promotes cardiac development and repair via its regulation on cytoskeletal reorganization*

Xiangjian Zheng - Tiantan Hospital

11:00 *Discovery of targeted therapy using lipid nanoparticles (LNPs) for cerebral cavernous malformations*

Lun Li - University of Pennsylvania

11:20 *Focused Ultrasound Impels the Delivery and Penetration of Model Therapeutics into Cerebral Cavernous Malformations*

Richard Price - University of Virginia

11:40 DISCUSSION

12:00 LUNCH WITH FAMILY CONFERENCE ATTENDEES

Session V - CCM Gene Function & Signaling

Moderated by Angeliki Louvi

1:20 *The role of integrin signaling in cerebral cavernous malformations*

Mikaela Keyser - University of Queensland

1:40 *A role for the Golgi protein USO-1 in Cerebral Cavernous Malformations*

Ran (Tony) Cheng - University of Toronto

2:00 *A short lysine-rich amino acid sequence drives KRIT1 subcellular compartmentalization*

Andrea Perrelli - University of Rochester

2:20 *Emerging role of CDC-42 and Connexin43 in apicobasal depolarization of brain endothelial cells and lesion leakage in cerebral cavernous malformation type-3*

Anuska Andjelkovic - University of Michigan

2:40 DISCUSSION

3:00 CLOSING REMARKS

Doug Marchuk - Duke University & Alliance to Cure Scientific Advisory Board Chair

3:10 BREAK

3:30 END OF MEETING