

Program



Hydrocephalus 2008

Hannover, September 17th- 20th 2008



Wednesday, 17th September 2008

Welcome and opening lectures

Room A

- 16:15 Welcome Notes: Samii M, Krauss JK, Klinge PM
16:30 Challenges in hydrocephalus research. Wikkelse C
17:00 iNPH vs. LOVA : Current Status and Modern Concept of Adult Hydrocephalus. Oi S
17:30 Future of Academic neurosurgery. Black PM

18:00 Welcome Reception

Oral Presentations

Thursday, 18th September 2008

08:00–10:00 Session 1A. Hydrocephalus – signs and symptoms

Room A

Chairs: Henning Stolze, Flensburg, Germany
John D. Pickard, Cambridge, UK

- 08:20 O.001 Symptoms and signs in 158 patients with idiopathic normal pressure hydrocephalus (iNPH) *I. Skagervik et al.*
08:32 O.002 Quantitative study of gait and balance in normal pressure hydrocephalus *S. Dombrowski et al.*
08:44 O.003 Negative BOLD-signal in normal pressure hydrocephalus (NPH) patients before and after lumbar puncture
M. Ebke et al.
08:56 O.004 Urinary incontinence in idiopathic normal pressure hydrocephalus: Associated with overactive bladder or due to
gait disturbance? *H. Minami et al.*
09:08 O.005 A three level system for the assessment of idiopathic normal pressure hydrocephalus *P. Hellström et al.*
09:20 O.006 Safety of large volume CSF removal for the inner ear function in normal pressure hydrocephalus patients
M.J. Mirzayan et al.
09:32 O.007 Shunt-indication in normal pressure hydrocephalus: Value of lumbar subcutaneous shunt when other diagnostic
tools fail *M. Luecke and U. Kehler*
09:44 O.008 Visual field examination for children with shunted hydrocephalus *D. Rudolph et al.*

08:00–10:00 Session 1B. Modeling and physics of hydrocephalus

Room B

Chairs: James Pat McAllister II, Salt Lake City, Utah, USA
Michael Kiefer, Homburg-Saar, Germany

- 08:20 O.009 Volume changes inside the craniospinal system during the cardiac cycle *A. Wåhlin et al.*
08:32 O.010 Blood, cerebrospinal fluid and brain dynamics in communicating hydrocephalus *R. Penn et al.*
08:44 O.011 Modelling normal pressure hydrocephalus using diffusion tensor imaging *N.C. Keong et al.*
08:56 O.012 A physical model of occlusive hydrocephalus *R. Bouzerar et al.*
09:08 O.013 Mathematical modelling of aqueductal CSF flow *M. Czosnyka et al.*
09:20 O.014 Multilevel modelling of intracranial pressure after endoscopic third ventriculostomy *D. Santamarta et al.*
09:32 O.015 New model of cervical stenosis in cats: Effects on size of brain ventricles and cerebrospinal fluid pressure
M. Klarica et al.
09:44 O.016 Resonance and intracranial pressure pulsations: An experimental study *M.E. Wagshul et al.*

10:30–12:30 Session 2A. Neuroimaging

Room A

Chairs: Norman Relkin, New York, NY, USA
Mats Tullberg, Gothenburg, Sweden

- 10:50 O.017 Ventricular size in healthy elderly and idiopathic normal pressure hydrocephalus: Should we use Evans index?
K. Ambarki et al.
11:02 O.018 Disproportionately enlarged subarachnoid-space hydrocephalus (DESH) is a major feature of idiopathic normal
pressure hydrocephalus: Study of idiopathic normal pressure hydrocephalus on neurological improvement
(SINPHONI) *E. Mori et al.*
11:14 O.019 Pre- and postoperative diffusion tensor MR imaging in NPH/chronic hydrocephalus *C. Sprung et al.*
11:26 O.020 Can we measure blood and CSF flows adequately using phase contrast MRI? *A. Wåhlin et al.*
11:38 O.021 Identification of venous variants in the pineal region with 3D preoperative computed tomography and magnetic
resonance imaging navigation – Implications for hydrocephalus and diseases of the CSF *M. Giordano et al.*
11:50 O.022 Anatomical study of the quadrigeminal cistern in the living with three-dimensional MR cisternography
L. Columbano et al.
12:02 O.023 3D-CISS MR imaging in obstructive hydrocephalus – Relevance for Endoscopic III. Ventriculostomy and clinical
results *M. Kunz et al.*
12:14 O.024 Cerebral hydrodynamic and white matter stress evolution after endoscopic third ventriculostomy *O. Balédent et al.*
12:26 O.025 Noninvasive intracranial compliance from MRI-based measurements of transcranial blood and CSF Fflows:
Indirect vs. direct approach *N. Alperin and R.W. Tang*

- 10:30–12:30** **Session 2B. Aspects of CSF and blood flow dynamics and pathology in hydrocephalus** **Room B**
Chairs: Zofia Czosnyka, Cambridge, UK
Martin U. Schuhmann, Tübingen, Germany
- 10:50 O.026 Prognostic value of CSF pulse waveform analysis in NPH patients *A. Mangiola et al.*
11:02 O.027 Comparison of intraparenchymal and CSF pulse waves *N. Lenfeldt et al.*
11:14 O.028 The effect of body position on cerebrospinal fluid (CSF) movement and pressure *M. Klarica et al.*
11:26 O.029 Are intracranial volume variations dependent on cerebrospinal fluid pressure? *I.R. Manchester et al.*
11:38 O.030 The relationship between aqueductal pulsatility and ventriculomegaly in experimental extraventricular hydrocephalus *M.E. Wagshul et al.*
11:50 O.031 Morphological correlation between CBF velocity and CSF pulse pressure waveforms in NPH patients *C. Anile et al.*
12:02 O.032 Noninvasive autoregulation testing in normal pressure hydrocephalus *Z. Czosnyka et al.*
12:14 O.033 CSF and blood flows alterations in cerebral venous thrombosis *S. Stoquart-El Sankari et al.*
- 14:00–16:00** **Session 3A. Assessment of CSF dynamics for diagnosing hydrocephalus** **Room A**
Chairs: Anders Eklund, Umeå, Sweden
Nina Andersson, Umeå, Sweden
- 14:20 O.034 Estimation of outflow conductance and compliance using sinusoidal infusion pattern *K.G. Andersson et al.*
14:32 O.035 Comparative study of Marmarou's bolus and Katzman's infusion tests in the diagnosis of idiopathic normal pressure hydrocephalus *M.A. Poca et al.*
14:44 O.036 A positive lumbar tap test ratio depends on the amount of cerebrospinal fluid removed from idiopathic normal pressure hydrocephalus (iNPH) patients *K. Kato et al.*
14:56 O.037 On-line evaluation of the CSF compensatory parameters during constant rate infusion test *H. Juniewicz et al.*
15:08 O.038 Sensitivity and specificity of Rout in predicting outcome in patients with idiopathic normal pressure hydrocephalus *M.A. Poca et al.*
15:20 O.039 Index of cerebrospinal compensatory reserve in hydrocephalus *D.J. Kim et al.*
15:32 O.040 Diagnostic intracranial pressure (ICP) monitoring in idiopathic normal pressure hydrocephalus (iNPH) *P.K. Eide and W. Sorteberg*
15:44 O.041 Validation of CSF tap test in prospective study of idiopathic normal pressure hydrocephalus *M. Ishikawa et al.*
- 14:00–16:00** **Session 3B. Aspects of valve and shunt dynamics and pathology in hydrocephalus** **Room B**
Chairs: Juan Sahuquillo, Barcelona, Spain
Ed Stopa, Providence, Rhode Island, USA
- 14:20 O.042 Gravitational valves in the treatment of communicating hydrocephalus – Valves for every situation? *P. Vacek and J. Mork*
14:32 O.043 The need of a programmable gravitational valve for hydrocephalus treatment *U. Kehler*
14:44 O.044 Use of gravitational valves in shunting pseudotumor cerebri patients *J. Tilgner et al.*
14:56 O.045 Adjustable shunt valve induced MRI artefact: A comparative study *A. Toma et al.*
15:08 O.046 Success rate of adjusting Codman Medos programmable valves by using a new programmer with acoustic device *P. Schiebel et al.*
15:20 O.047 Investigation of the hydrodynamic properties of Polaris valve *D. Allin et al.*
15:32 O.048 Tests of explanted valves. Nonsense or necessity? *A. Aschoff et al.*
15:44 O.049 PERVAC (Permanent Venous Access), hydrocephalus shunt to the jugular vein, the natural antisiphon *P.-E. Nilsson*
- 16:30–18:15** **Session 4A. Brain biomarkers and brain metabolism in hydrocephalus** **Room A**
Chairs: Peter Paul De Deyn, Antwerp, Belgium
Conrad E. Johanson, Providence, Rhode Island, USA
- 16:50 O.050 Cerebral white matter hypoxia in young rats with kaolin-induced hydrocephalus *M.R. Del Bigio et al.*
17:02 O.051 Magnetic Resonance Spectroscopy of INPH-metabolism in the frontal deep white matter and in thalamus *F. Lundin et al.*
17:14 O.052 Assessment of beta-amyloid in frontal cortical brain biopsy and by PET with [¹¹C]PiB in suspected NPH *V. Leinonen et al.*
17:26 O.053 Simultaneous monitoring of cerebral energy metabolism (microdialysis) and intracranial pressure (ICP) in idiopathic normal pressure hydrocephalus (iNPH) *P.K. Eide and M. Stanisic*
17:38 O.054 Effect of CSF tap test on symptoms and extracellular fluid biomarkers in NPH *K. Rabie et al.*
17:50 O.055 Temporal changes of CSF markers during external lumbar drainage in patients with idiopathic normal pressure hydrocephalus *A. Tarnaris et al.*
18:02 O.056 Proteomic analysis of cerebrospinal fluid in idiopathic normal pressure hydrocephalus (INPH) *S. Assuras et al.*

- 16:30–18:15 Session 4B. Classification, etiology and co-morbidity of hydrocephalus** **Room B**
Chairs: Harold ReKate, Phoenix, Arizona, USA
 Jan Malm, Umeå, Sweden
- 16:50 O.057 Correlation between ventriculo-aqueductal and ventriculo-cisternal perfusion for determination of cerebrospinal formation in cats *D. Oreskovic et al.*
- 17:02 O.058 Very low pressure hydrocephalus: Report of two cases and review literature *W. Tirakotai et al.*
- 17:14 O.059 The definition and classification of congenital hydrocephalus; a proposal based on personal experience *T. Inagaki et al.*
- 17:26 O.060 Prognosis of idiopathic normal pressure hydrocephalus patients at long-term following shunt surgery *M.J. Mirzayan et al.*
- 17:38 O.061 Treatment of Binswanger's disease (BD) by ventriculo-peritoneal shunting: An ongoing interventional, randomized, double blind study *M. Tisell et al.*
- 17:50 O.062 Risk factors for familial and sporadic congenital hydrocephalus *M. VanLandingham et al.*
- 18:15–19:15 Presentation and Constitution of the International Society of Hydrocephalus and CSF Disorders**
Carsten Wikkelsö, Petra M. Klinge, Michael A. Williams, Anders Eklund, John A. Duncan 3rd, Anthony Marmarou, John D. Pickard

Friday, 19th September 2008

- 08:00–10:00 Session 5A. Experimental hydrocephalus** **Room A**
Chairs: Marc Del Bigio, Winnipeg, Manitoba, Canada
 Hazel C. Jones, Oxon, UK
- 08:20 O.063 Particle transport in the pathogenesis of hydrocephalus: A new animal model *S. Krishnamurthy et al.*
- 08:32 O.064 Amyloid-beta clearance in experimental neonatal hydrocephalus *K.E. Deren et al.*
- 08:44 O.065 Pathology of AD-related inflammatory and oxidative stress mediators in Kaolin-induced hydrocephalus model of the aged rat *A. Heile et al.*
- 08:56 O.066 VEGF/VEGFR-2 changes in brain, CSF and choroid plexus after chronic obstructive hydrocephalus *S. Dombrowski et al.*
- 09:08 O.067 Spatiotemporal regulation of aquaporin-4 in the kaolin induced hydrocephalic rat brain – Experimental study using in vivo MRI and immunological methods *A. Skjolding et al.*
- 09:20 O.068 Gait disorder following experimental hydrocephalus *R.G. Abraham et al.*
- 09:32 O.069 Shunt malfunction in experimental neonatal hydrocephalus *K.E. Deren et al.*
- 09:44 O.070 Morphological correlation of valvular mechanism preventing CSF-outflow along the spinal nerve roots *W. Luedemann et al.*

- 08:00–10:00 Session 5B. Treatment and management of complications** **Room B**
Chairs: Bertil Romner, Copenhagen, Denmark
 Roger Bayston, Nottingham, UK
- 08:20 O.071 Magnetic field interactions in adjustable hydrocephalus shunts *A. Lavinio et al.*
- 08:32 O.072 Urgent adjustment of variable Medos-, Sophysa- and Miethke-ProGAV-valves with standard permanent magnets. Possibilities and limitations *K. Dette et al.*
- 08:44 O.073 Failures and suboptimal positions of gravitational valves at different implantation sites (retroauricular vs. thoracic) *B. Vienenkötter et al.*
- 08:56 O.074 Management of post haemorrhagic hydrocephalus with external ventricular drain *N. Farooqi et al.*
- 09:08 O.075 Early ventriculoperitoneal shunt surgery for the treatment of obstructive hydrocephalus caused by subarachnoid hemorrhages or intraventricular hemorrhages *T. Cho*
- 09:20 O.076 Perioperative risk factors for short-term shunt revisions in adult hydrocephalus patients *D. Farahmand et al.*
- 09:32 O.077 Risk factors, prevention and treatment of CSF fistulas after vestibular schwannoma surgery *L.H. Stieglitz et al.*
- 09:44 O.078 Ventriculoperitoneal shunt and tracheotomy: both procedures in the same time? *R. Seizeur et al.*

- 10:30–12:30 Session 6A. ETV and management of hydrocephalus** **Room A**
Chairs: Michelangelo Gangemi, Naples, Italy
 Joachim K. Krauss, Hannover, Germany
- 10:50 O.079 Pitfalls, considerations and complications of ventricular endoscopy *K. Rotim et al.*
- 11:02 O.080 Endoscopic procedures in patients with shunt malfunction *A. Sufianov et al.*
- 11:14 O.081 Endoscopic third ventriculostomy for tumoral obstructive hydrocephalus in adult population *A. Fichten et al.*
- 11:26 O.082 The impact of neuroendoscopic aspiration of intraventricular haemorrhages on shunt-dependency *L. Basaldella et al.*
- 11:38 O.083 Endoscopic third ventriculostomy (ETV) in communicating hydrocephalus *U. Kehler and B. Eckert*
- 11:50 O.084 Significance of (early) high-resolution MRI imaging in paediatric hydrocephalus *M.U. Schuhmann et al.*
- 12:02 O.085 Primary obstructed outlets of the fourth ventricle: neuroendoscopic inspection and treatment *A. Feletti et al.*
- 12:14 O.086 Sylvian fissure arachnoid cysts – The results of neuroendoscopic treatment *E. Nowosawska et al.*

- 10:30–12:30 Session 6B. Outcome in hydrocephalus and CSF Disorders Room B**
Chairs: Domenico D’Avella, Padova, Italy
Mark Luciano, Cleveland, Ohio, USA
- 10:50 O.087 The influence of valve-adjustability on outcome in hydrocephalus – Possibilities and limitations *C. Sprung et al.*
11:02 O.088 Clinical experiences in patients with idiopathic normal-pressure hydrocephalus with the adjustable gravity valve proGAV Aesculap® *J. Lemcke and U. Meier*
11:14 O.089 Role of compliance and timing of outcome assessment in normal pressure hydrocephalus *M.U. Schuhmann et al.*
11:26 O.090 The importance of modern diagnostic tools and therapeutic methods in the diagnosis and treatment of communicating hydrocephalus *N. Chautouras et al.*
11:38 O.091 Dorsal midbrain syndrome (DMS): Treatment modalities *M. Kiefer et al.*
11:50 O.092 Benign intracranial hypertension: Experience from a single centre *A. Tarnaris et al.*
12:02 O.093 Prognostic clinical and radiological parameters for the evolution of hydrocephalus in patients with vestibular schwannomas *V.M. Gerganov et al.*
12:14 O.094 Simple valveless cystoventricular shunts in arachnoid cyst, a case series *T. Keinert et al.*
- 14:00–16:00 Session 7A. (Technical) advances in surgical management of hydrocephalus Room A**
Chairs: Magnus Tisell, Gothenburg, Sweden
Gerald D. Silverberg, Stanford, California, USA
- 14:20 O.095 A new assessment tool for evaluation of normal pressure hydrocephalus (NPH): Quantitative volumetric CSF drainage *M.G. Wasner et al.*
14:32 O.096 A novel impedance sensor to monitor and control ventricular size *A. Linninger et al.*
14:44 O.097 The usage of new ultrasonic microprobe in neuroendoscopy *H. Jednacak et al.*
14:56 O.098 Navigation- and laser assisted neuroendoscopy for stent placement in complex hydrocephalus *H.C. Ludwig and V. Rohde*
15:08 O.099 Introduction of a new instrument for easy frameless stereotactic placement of shunt catheters *L.H. Stieglitz et al.*
15:20 O.100 An “intelligent” shunt device and method for treating hydrocephalus secondary to intraventricular hemorrhage *F. Pizzi*
15:32 O.101 Laparoscopic versus laparotomic shunt placement in adults with hydrocephalus *V. Vybíhal et al.*
15:44 O.102 Posterior fossa lesions: Treat the disease not hydrocephalus *N. Farooqi et al.*
- 14:00-16:00 Session 7B. Epidemiology, trials and registries Room B**
Chairs: Kristina Cesarini, Uppsala, Sweden
Hugh K. Richards, Cambridge, UK
- 14:20 O.103 Protocol for the randomized controlled SVASONA trial (ISRCTN51046698): Shunt valves plus shunt assistant versus shunt valves alone for controlling overdrainage in idiopathic normal-pressure hydrocephalus in adults *J. Lemcke et al.*
14:32 O.104 Treatment of normal pressure hydrocephalus using the GAV shunt system: Preliminary results of a Spanish multicentre study *M.A. Arraez et al.*
14:44 O.105 Survival rate and reliability of the ProGAV adjustable CSF shunt: Results of the German prospective multicenter observational study *M.J. Mirzayan et al.*
14:56 O.106 Clinical course of patients in the European INPH study *C. Wikkelsö et al.*
15:08 O.107 Improvements of NPH symptoms after shunting operation and occurrence of serious adverse events in a prospective study of iNPH (SINPHONI) *M. Hashimoto et al.*
15:20 O.108 A registry for comparing catheter-related infection rates with and without antibiotic impregnated catheters after ventriculo-peritoneal shunts for hydrocephalus *P. Steinbok*
15:32 O.109 SILVER trial – Interim results *N.C. Keong et al.*
15:44 O.110 Follow-up of 50 infants treated with the Codman adjustable valve – Retrospective analysis of clinical overdrainage and valve re-adjustment *M. Heckelmann et al.*
- 16:30–18:15 Session 8A. Pharmaceutical modulation of the CNS (CNS drug delivery) Room A**
Chairs: Peter M. Black, Boston, Massachusetts, USA
Thomas Brinker, Hannover, Germany
- 16:50 O.111 Intranasal curcumin to improve olfactory CSF pathways – Preliminary findings *M. Rammling et al.*
17:02 O.112 Vinpocetine as a modulator of Aquaporin 1 and 4 *L. Paul et al.*
17:14 O.113 Minocycline inhibits gliosis in experimental congenital hydrocephalus *J.P. McAllister et al.*
17:26 O.114 Ex vivo gene therapy of hydrocephalus: Intrathecal implantation of mesenchymal stem cells producing the neuroprotective peptide Glucagon like peptide-1 *A. Heile et al.*
17:38 O.115 Ex-vivo gene therapy: A retrievable device for cell-based peptide delivery into the CSF space *S. Glage et al.*
17:50 O.116 Vital risks of on-off-valves in neurooncology. In-vivo experience in 8 patients and in-vitro testing of 8 specimens *D. Hertle et al.*

16:30–18:15 **Session 8B. Cognition in hydrocephalus and related dementias** **Room B**
Chairs: Thomas Münte, Magdeburg, Germany
Per Hellström, Gothenburg, Sweden

- 16:50 O.117 Cognitive deficits in idiopathic normal pressure hydrocephalus *K. Dolge et al.*
17:02 O.118 Cognitive and motor improvement after shunting in normal pressure hydrocephalus: A real change or merely the learning effect after repeated test? *E. Solana et al.*
17:14 O.119 What enhanced cortical activity occurs in the INPH brain after CSF drainage in conjunction with improved performance? *N. Lenfeldt et al.*
17:26 O.120 Cognitive and biochemical profile of patients suffering from idiopathic normal pressure hydrocephalus *A. Tarnaris et al.*
17:38 O.121 CSF and blood flows in mild cognitive impairment and Alzheimer disease. Differential diagnosis with normal pressure hydrocephalus? *S. Stoquart-El Sankari et al.*
17:50 O.122 Two cases of NPH complicated with psychotic disorder *M. Takaya et al.*

Saturday, 20th September 2008

09:00-10:45 **Session 9A. Quality of life, social impact, health care and rehabilitation** **Room A**
Chairs: Michael A. Williams, Baltimore, Maryland, USA
Dory Kranz, San Francisco, California, USA

- 09:20 O.123 Organisation of a hydrocephalus care unit *M. Edsbagge et al.*
09:32 O.124 Improvement of caregiver burden by shunt operation in patients with idiopathic normal pressure hydrocephalus: Evidence from SINPHONI *H. Kazui et al.*
09:44 O.125 Long-term-follow-up (max 23 years) and life-quality of 30 shunted patients after frustran ETVs *C. Dictus et al.*
09:56 O.126 Adjustment and quality of life after childhood hydrocephalus and meningitis: A postal survey of long-term outcome and service use *R.E. Sumpter et al.*
10:08 O.127 Optimized emergency card for shunt patients with integrated SD-card *B. Vienenkötter et al.*
10:20 O.128 Local anaesthesia in shunt augmentations or revisions of gravitational valves *G. Karpel-Massler et al.*
10:32 O.129 Internet-based database facilitates international multi-centric normal-pressure hydrocephalus study *B. Kischnik et al.*

09:00-10:45 **Session 9B. Pediatric hydrocephalus and adolescence** **Room B**
Chairs: Marianne Juhler, Copenhagen, Denmark
Regina Eymann, Homburg-Saar, Germany

- 09:20 O.130 Cerebral hydrodynamics in newborn *O. Balédent et al.*
09:32 O.131 Detection of occult shunt dependency with computerized overnight monitoring in children *M.U. Schuhmann et al.*
09:44 O.132 New protocol of treatment of premature children with posthemorrhagic hydrocephalus *D.U. Zinenko and M.U. Vladimirov*
09:56 O.133 Trapped fourth ventricle in premature infants with posthemorrhagic hydrocephalus *D.U. Zinenko and M.U. Vladimirov*
10:08 O.134 Perforation holes in ventricular catheter – “Is less more”? *U.W. Thomale et al.*
10:20 O.135 Expression of VEGF (Vascular Endothelial Growth Factor) and TGF- β 1 (Transforming Growth Factor β 1) in cerebrospinal fluid of children with non-communicating hydrocephalus and myelomeningocele *M. Nabiumi et al.*
10:32 O.136 Neuroendoscopic surgical treatment choroid plexus cysts associated with childrens’ hydrocephalus *V. Petraki et al.*

Closing Session **Room A**

- 11:00 Directions for future research and clinical trials.
Marmarou A
12:00 Closing remarks and announcement of "Hydrocephalus 2009"
Marmarou A Wikkelse C Krauss JK Klinge PK