

## **The Netherlands Experimental Stroke Alliance – an initiative to strengthen the national preclinical stroke research program**

One of the ambitions of the CONTRAST consortium is to provide an environment of continuing and successful experimental cerebrovascular research in the Netherlands. To make an inventory of the current activities in this area of research, we recently organized a meeting for principal investigators involved in experimental stroke studies in the Netherlands. The meeting took place in Utrecht on October 31, 2018 and was attended by fourteen participants from nine research groups. Research activities and plans were presented, and a fruitful discussion on the future of experimental stroke research in the Netherlands was initiated. A list of the invited principal investigators and their main research topics is given below.

- *Ed van Bavel/Jonathan Coutinho (Academic Medical Center Amsterdam):*
  - Microinfarcts and repair in vascular cognitive decline
  - Microthrombi and reperfusion in acute ischemic stroke
  - Suppressing pericyte constriction in stroke
  
- *Heleen van Beusekom (Erasmus Medical Center Rotterdam):*
  - Metabolic imaging and endothelial injury
  
- *Ana Casas/Harald Schmidt (Maastricht University):*
  - Mechanism-based drug repurposing for post-neuroprotection
  
- *Jeannette Hofmeijer (University of Twente):*
  - Synaptic failure and selective vulnerability
  
- *Elly Hol/Mervyn Vergouwen (University Medical Center Utrecht):*
  - Glia activation, inflammation and cognitive decline after stroke
  
- *Rick Dijkhuizen (University Medical Center Utrecht):*
  - MRI-based diagnosis, prediction and treatment monitoring
  - Incomplete microvascular reperfusion after acute ischemic stroke

- Interaction between cerebral amyloid angiopathy and stroke pathophysiology
  - Inflammation-targeted nanotherapy
  - Plasticity/recovery-enhancing therapies (e.g. non-invasive brain stimulation)
- *Amanda Kiliaan (Radboud University Medical Center Nijmegen):*
    - Longitudinal effect of stroke and AD on neuroimaging and cognitive parameters in male and female AD mice
    - Specific nutritional component (Hydroxytyrosol) from olive oil as therapeutic approach after acute ischemic stroke
    - Specific multi-nutrient diet as therapeutic approach after acute ischemic stroke
    - Exercise as treatment after acute ischemic stroke
- *Arn van den Maagdenberg/Marieke Wermer (Leiden University Medical Center):*
    - Stroke and migraine: shared mechanisms
- *Huib Maas/Gert Kwakkel (Vrije Universiteit Center Amsterdam/Amsterdam University Medical Center):*
    - Muscle mechanics, limb kinematics and neural control of movement after stroke
- *Cora Nijboer (University Medical Center Utrecht):*
    - Nutritional interventions for neonatal ischemic brain injury
    - Role of TNF $\alpha$ , TNF-Rs and inhibitors in neonatal ischemic brain injury
    - Mesenchymal stem-cell based therapies for preterm white matter injury
    - Growth factor-based therapies for preterm white matter injury

These groups, their expertise and interests, as well as their ambitions form an excellent basis for further strengthening of the experimental stroke research program in a more collaborative effort. Importantly, all participants were enthusiastic about working together more closely in the future. As a next step, we agreed to continue with a follow-up meeting early next year, to further discuss how we can exchange knowledge, exploit complementary expertise, facilitate shared use of specialized equipment and apply for joint funding. An interesting option that was brought up was to join forces for execution of preclinical multicenter trials.

By forming an alliance, provisionally named as the Netherlands Experimental Stroke Alliance (NESA), we intend to set the stage for a stronger and more collaborative approach of experimental stroke research in the Netherlands. Obviously, additional research groups that

perform experimental stroke(-related) studies (e.g. in the field of cerebral small vessel disease), are welcome to join this alliance.

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