brighton and sussex medical school

neocirculation

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Neonatal Adaptation

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Background

Neonatal circulatory failure is a unique condition which can affect up to 50% of all infants admitted to NICU. [1,2] The acute consequences can lead to intraventricular haemorrages which can in turn can lead to cerebral palsy a condition that has a great impacts on patients, their families and society. [1,2] Many of the treatments, such as dopamine, lack evidence in the treatment of this condition, but also around 70-80% of drugs used in the neonatal population are unlicensed.[3] This is an under-researched within the field of neonatology with a number of unanswered questions. The NEO-Circ and the Neo-Adapt projects aim to answer some of these dilemmas though-

- Developing an evidence based definition of circulatory failure
- Researching novel and non-invasive biomarkers to monitor an infants cardiovascular health[4,5]
- Developing a licenced neonatal formulation of dobutamine[6]. Evidence indicates that dobutamine may improve neurological outcome in infants with circulatory failure as well as other parameters such as gut perfusion.[7,8,9]

The NEO-Circ and the Neo-Adapt Projects

NEO-Circ 1- Exploratory therapeutic trial with dobutamine pharmacokinetic and pharmacodynamic sub studies

NEO-Circ 2- Dobutamine dose finding study

NEO-Circ 3- Large randomised controlled trial for the use of dobutamine in neonatal circulatory failure

NEO-Circ 4- Systematic review of the use of dobutamine in neonates and children

NEO-Adapt 1, 2 & 3- Prospective cohort studies exploring novel reference values for non invasive biomarkers of cardiovascular health in neonates aged >33 weeks gestational age who are well, receiving intensive care and therapeutic total body cooling. This will include dobutamine pharmacokinetic and pharmacodynamic sub study's

Funding

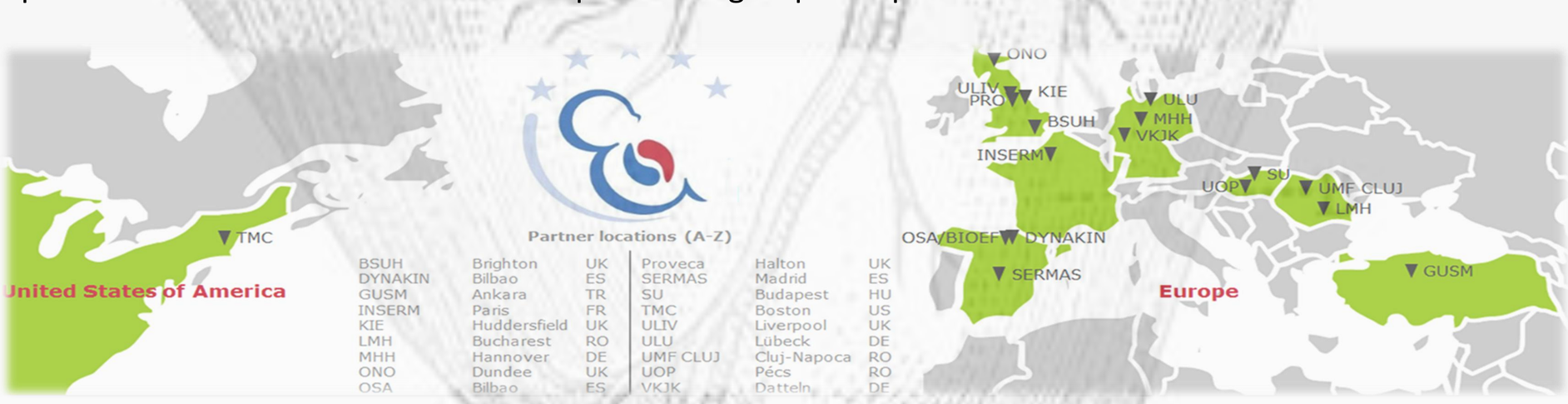
- 2011-2016 FP7-Single stage-Health Grant €5,99 million. Dobutamine for NEOnatal CIRCulatory failure defined by novel biomarkers (PD Dr Heike Rabe on behalf of an international consortium)
- 2013-2016 PhD studentship £ 125198 (Partly funded by a FP7 grant & by the Rockinghorse Appeal)

SEVENTH FRAMEWORK PROGRAMME

Rockinghorse

NEO-Circulation Consortium

The consortium includes international experts from 8 countries in neonatal medicine, pharmacology, pharmacogenomics, drug formulation and pre-clinical neonatal models and an experienced group of experienced multicentre clinical trials NICU's.



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