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Research interests

The goal of my research programme is to repurpose and test in the clinic a variety of neuroprotective treatments that have reached sufficient proof of efficacy in animal and experimental models of neonatal brain injury.

Prematurity accounts for 11% of all births, and is the leading global cause of death and disability under 5 years of age. All forms of cerebral palsy are seen in preterm children. Over 30% of survivors following preterm birth experience neurocognitive and socio-emotional problems from early life lasting into adulthood. Psychiatric disorders are present in around 25% of preterm adolescents. Prematurity leads to the loss of 75 million disability adjusted life years per annum worldwide.

In the term infant, brain injury is most commonly due to hypoxia-ischaemia during labour. Hypoxic ischemic encephalopathy (HIE) occurs in 1.5 to 2.5 per 1000 live births in high income countries. However, 99% of the disease burden is in low and middle income countries. There is an urgent need to develop treatment strategies which supplement the protective effect of therapeutic hypothermia in high income countries and is independently safe, effective and acceptable in low and middle income countries.

I am the Chief Investigator of a phase1, randomised placebo controlled, single ascending dose trial to evaluate the safety, tolerability, and pharmacokinetics of cannabidiol in conjunction with hypothermia in neonates with moderate or severe hypoxic ischemic encephalopathy with commercial sponsorship.

I have developed a new liquid preparation of a licensed drug after extensive formulation studies in collaboration with industry and pharmaceutical manufacturing units. This work is being funded by MRC Impact Acceleration Award. Pre-clinical studies of this treatment strategy have already shown promising results. Early phase clinical trials are being planned.

In a sustained translational research programme, other neuroprotective agents are being developed for hypoxic ischemic encephalopathy with external collaborators. This work is being funded by MRC DPFS.

The bulk of the world's neonatal mortality and morbidity exists in low and middle income countries with limited access to neonatal intensive care facilities. A key objective of my research programme, is to ensure that treatment strategies being developed can also be implemented world-wide.

I have considerable experience in conducting randomised trials in newborn babies. I have been the Chief Investigator of a multi-centre randomised trial of non-invasive ventilation in prematurity. I have also been in the trial management group of clinical trials on thyroxine supplementation and skin-care in newborn babies.

Qualifications

Cerebral haemodynamics, Doctor of Medicine, Cerebral electrical activity and cerebral fractional oxygen extraction in human preterm newborn infants. , University of Liverpool

1 Sept 2002 → 4 Jul 2007

Award Date: 4 Jul 2007

... → 1 Feb 2014 Fellowship of Royal College of Paediatrics and Child Health, FRCPCH

5 Aug 1997 → 5 Mar 2007 Certificate of completion of training (Neonatal Medicine), CCT Paediatrics and Neonatal Medicine

... → 7 Jun 1999 Membership of Royal College of Paediatrics and Child Health, MRCPCH

1 Mar 1994 → 21 Mar 1997 Diploma in Child Health, DCh

7 Aug 1987 → 10 Jan 1994 Bachelor of Medicine and Bachelor of Surgery, MBBS

Employment

Clinical Senior Lecturer in Neonatal Medicine

Perinatal Imaging & Health

King's College London

15 Aug 2016 → present

Centre for the Developing Brain

King's College London

United Kingdom

15 Aug 2016 → present

Honorary Consultant Neonatologist

GSTT Guy's and St Thomas' NHS Foundation Trust

London, United Kingdom

15 Aug 2016 → present

Research output

PPAR Gamma Receptor: A Novel Target to Improve Morbidity in Preterm Babies

Victor, S., Forbes, B., Greenough, A. & Edwards, D., 27 Oct 2023, In: *Pharmaceuticals*. 16, 11, p. 1530 11 p.

'Moving towards understanding', acceptability of investigations following stillbirth in sub-Saharan Africa: A grounded theory study

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Victor, S., Chew, A. & Falconer, S., Aug 2021, In: *Brain and Behavior*. 11, 8, p. e2256 e2256.

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Lautarescu, A., Victor, S., Lau Zhu, A., Counsell, S., Edwards, D. & Craig, M., 7 Jun 2021, (Accepted/In press) In: *Archives of Women's Mental Health*.

Exploring the relationship between maternal prenatal stress and brain structure in premature neonates

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Understanding the complexities of unexplained stillbirth in sub-Saharan Africa; a mixed-methods study

Bedwell, C., Blaikie, K., Actis Danna, V., Sutton, C., Laisser, R., Tembo Kasengele, C., Wakasiaka, S., Victor, S. & Lavender, T., 15 Dec 2020, In: *BJOG*. 128, 7, 9 p.

Investigating altered brain development in infants with congenital heart disease using tensor-based morphometry

Ng, I., Bon throne, A., Kelly, C., Cordero-Grande, L., Hughes, E., Price, A., Hutter, J., Victor, S., Schuh, A., Rueckert, D., Hajnal, J., Simpson, J., Edwards, D., Rutherford, M., Batalle, D. & Counsell, S., 1 Dec 2020, In: *Nature Scientific Reports*. 10, 1, 14909.

Cognitive function in toddlers with Congenital Heart Disease: the impact of a stimulating home environment

Bon throne, A., Chew, A., Kelly, C., Almedom, L., Simpson, J., Victor, S., Edwards, D., Rutherford, M., Nosarti, C. & Counsell, S., 19 Nov 2020, In: *INFANCY*.

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Abnormal microstructural development of the cerebral cortex in neonates with congenital heart disease is associated with impaired cerebral oxygen delivery

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Victor, S., Lemmers, P. & Weindling, M., 1 Jan 2018, *Hemodynamics and Cardiology: Neonatology Questions and Controversies*. Elsevier, p. 295-310 16 p.

Biomarkers of hepatic injury and function in neonatal hypoxic ischemic encephalopathy and with therapeutic hypothermia

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High-flow nasal cannulae in very preterm infants after extubation.

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Stevens, A., Bonshek, C., Whatmore, A., Butcher, I., Hanson, D., De Leonibus, C., Shaikh, G., Brown, M., O'Shea, E., Victor, S., Powel, P., Settle, P., Padmakumar, B., Tan, A., Odeka, E., Cooper, C., Birch, J., Shenoy, A., Westwood, M., Patel, L., & 2 othersDunn, BW. & Clayton, P., 2014, In: PHARMACOGENOMICS. 14, 4

Topical oils for the prevention or treatment of dry skin in term infants (Protocol)

Cooke, A., Victor, S., Cork, MJ. & Lavender, T., 2014, In: Cochrane Database of Systematic Reviews.

An explanatory randomised placebo controlled trial of levothyroxine supplementation for babies born <28 weeks' gestation: results of the TIPIT trial.

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A novel method of collection of saliva for estimation of steroid levels in extremely premature infants

Ng, SM., Drury, JA., Turner, MA., Didi, M., Victor, S., Newland, P. & Weindling, AM., 2013, In: Acta Paediatrica. 102, 4, p. 356-359 4 p.

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Lavender, T., Victor, S., Furber, C., Campbell, M., Roberts, I., Bedwell, C. & Cork, M.J., 1 Jun 2012, In: BMC Pediatrics . 12, 59, 9 p.

Near-Infrared spectroscopy and its use for assessment of tissue perfusion in the neonate

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Plasma aminotransferase concentrations in preterm infants

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TIPIT: A randomised controlled trial of thyroxine in preterm infants under 28 weeks' gestation.

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Ng, SM., Turner, MA., Gamble, C., Didi, M., Victor, S., Malamateniou, C., Parkes, LM., Tietze, A., Gregory, L., Sluming, V., Abernethy, L. & Weindling, AM., 2008, In: *BMC Pediatrics* . 8, 26

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The relationship between cardiac output, cerebral electrical activity, cerebral fractional oxygen extraction and peripheral blood flow in premature newborn infants

Victor, S., Appleton, RE., Beirne, M., Marson, AG. & Weindling, AM., 2006, In: *Pediatric Research*. 60, 4

Effect of carbon dioxide on background cerebral electrical activity and fractional oxygen extraction in very low birth weight infants just after birth.

Victor, S., Appleton, RE., Beirne, M., Marson, AG. & Weindling, AM., 2005, In: *Pediatric Research*. 58, 3

Spectral analysis of electroencephalography in premature newborn infants: normal ranges

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