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# *Sajjad ur Rahman*

*HMG Hospital, Al Qassim, Saudi Arabia*


## Neuroprotective therapies for neonatal hypoxic ischemic encephalopathy – update 2018

Perinatal asphyxia remains a major cause of neonatal mortality and morbidity even in the most technologically advanced and prosperous countries. The incidence remains unchanged at 1-2% of live births in the developed countries. The incidence is much higher in developing countries. Until recent years, the management of hypoxic ischemic encephalopathy (HIE) was limited to supportive intensive care only because there was no specific treatment available to rescue neurons during HIE. However, over the last decade, moderate therapeutic hypothermia (33.5-34.5□), offered during the first 72 hours of life, has emerged as a promising new therapy in reducing neonatal mortality and morbidity due to HIE. Recently published large multicenter RCT's and meta-analyses including Cochrane meta-analysis 2013, have provided sufficient evidence on the safety and neuroprotective efficacy of this new therapy. Among the Neonatal Intensive Care Units (NICU) in the developed world, therapeutic hypothermia has now become a standard of care for asphyxiated term infants. The current evidence has proved that therapeutic hypothermia (TH) can provide up to 30% neuroprotection. Additional neuroprotection may be achieved by using pharmacologic therapeutic agents in combination with hypothermia. These potential therapeutic agents include xenon, erythropoietin, magnesium sulphate, allopurinol, opioids, topiramate, inhaled nitric oxide (iNO), N-acetylcysteine, minocycline and melatonin. Due to their different mechanisms of action, it is likely that these neuroprotective therapies may add incrementally to the proven beneficial effects of hypothermia. It is plausible that hypothermia may buy additional time for these neuroprotective agents to act within an expanded therapeutic window. Currently a number of clinical trials are comparing a combination of TH and a pharmacologic agent with TH alone. The preliminary results of these trials have started appearing in the medical literature. The presentation will review the current status of TH and preliminary results of these hypothermia plus neuroprotective therapies. The presentation will also include the way forward for resource constrained developing countries which have the highest number of babies born with perinatal asphyxia.

### Biography

Sajjad ur Rahman is currently working as Clinical Director of NICU in Sulaiman Al Habib Hospital, Al Qassin, Saudi Arabia. He worked as Professor and Chairman Department of Pediatrics at Peshawar Medical College, Peshawar, Pakistan. He also worked as Senior Consultant Neonatal Perinatal Medicine and Neurodevelopmental Pediatrics in Hamad Medical Corporation and Associate Professor of Clinical Pediatrics at Weill Cornell Medical College in Doha State of Qatar from 2008 till 2015. He did his FCPS (Pediatrics) from Pakistan and FRCPCH from UK where he trained in Neonatology and Neurodevelopmental Pediatrics. He did his Fellowship in Neonatal Perinatal Medicine from The Hospital for Sick Children, University of Toronto, Canada. He worked as Consultant Neonatologist in UK from 2001-2007. He has contributed a number of international publications, a book chapter on Neonatal Mortality and its correlates and has recently published a book titled "*Neonatal and Perinatal Mortality, Global challenges, Risk factors and Interventions*". He initiated and has been leading his own MRCT Mag Cool Study. He is currently on the Editorial Board of *Journal of Clinical Neonatology* (JCN) and *World Journal of Obstetrics and Gynecology* and a reviewer for a number of international journals.

sajjadjan@hotmail.com

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