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What is the risk of chronic kidney disease after acute kidney injury in the neonatal period?

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The incidence of acute kidney injury (AKI) in neonates has been poorly studied, but recent studies suggest ranges from 18-40%. Risk factors for AKI in the neonatal population include sepsis, perinatal asphyxia and ECMO (extracorporeal membranous oxygenation). Mortality rate of neonates who have AKI is significantly elevated with a range of 45-70%. Over the last 15 years, studies of acute kidney injury in the paediatric and adult population has shown both increased mortality rates as well as risk of developing chronic kidney disease later in life. The preterm neonatal kidney is extremely vulnerable to injury with glomerulogenesis ongoing after birth, as well as other cardiovascular and respiratory compromises. Defining AKI in neonates has been difficult due to maternal creatinine influences in the first 24-48 hours and the significant changes that occur in the glomerular filtration rate in the first few weeks of life. A new definition of neonatal AKI has been proposed based on modified KDIGO (Kidney Diseases: Improving Global Outcomes) criteria, which will allow comparison of data between patient groups, neonatal units and countries. With recent literature suggesting premature neonates, especially those with AKI during the early neonatal period, are at increased risk of long-term renal insufficiency, an international group of nephrologists and neonatologists has formed the Neonatal Kidney Collaborative. This group is currently undertaking the multi-center international AWAKEN (Assessment of Worldwide Acute Kidney injury Epidemiology in Neonates) study. This presentation will discuss AKI in the neonatal period, risks of premature birth on renal development, and provide progress on the AWAKEN study.

Biography

Alison Kent started with her paediatric training in Adelaide, Australia, completing her Neonatal Fellowship at McMaster University, Ontario, Canada. She is a Senior Consultant at the Centenary Hospital for Women and Children, Canberra Hospital, Australia. She completed her MD in 2009, and her thesis is based on neonatal blood pressure and renal injury risks from being born preterm. She has over 50 peer reviewed publications. She is a founding member of the Executive Committee of the Neonatal Kidney Collaborative, a group of Nephrologists and Neonatologists investigating the incidence of acute kidney injury in the neonatal population and its long term consequences.

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