



Children with Acquired Brain Injury (ABI)

- *What do we owe them?*

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Traumatic brain injuries following road traffic accidents, stroke, brain tumour and its treatment constitute a large proportion of children with acquired brain injury (ABI). There are at least 35,000 children being admitted due to traumatic acquired brain injury (ABI) annually in the UK (1). It is estimated that about 82.3 children per 100,000 are affected due to non-traumatic ABI. Recent advances in critical care including out of hospital care, neurosurgical and neuroprotective strategies and oncological management have resulted in improved survival in children with ABI. The focus of attention is gradually shifting from improving survival to improving quality of life for children with ABI. The impact and morbidity due to ABI is substantial not only to the affected child but to the family and society as a whole. Gordon et al (2) have demonstrated that there is an increased prevalence of prior traumatic ABI in juvenile prison inmates studied in Texas county of US. This indicates a huge vulnerability of children following ABI to get involved in criminal behaviour. Given that brain injury can affect the networks that regulate emotions and behaviour, it is not surprising therefore that mental health difficulties are common following ABI. Affected children develop functional difficulties in several domains, including mobility, dexterity, memory, processing speed, attention, concentration, emotion and behaviour.

Often following traumatic ABI motor function recovers well in children and they appear normal. This can often create a false sense of normality and children not infrequently get labelled as naughty or lazy in school when they fail to perform as expected. This invisible injury results in conflicts with school including behavioural issues and can easily spiral into school failure if not intervened in a timely fashion. The increased stress of trying to cope with the societal expectations with an altered brain function can push quite a few youngsters into clinical depression and anxiety disorder. While children with pre-existing hyperactivity disorders (ADHD) are more likely to be involved in traumatic ABI, it has been shown that even 5 to 10 years later, children with ABI can also develop ADHD (3) Together all these difficulties lead to poor societal participation and achievement in life and a poor quality of life as a consequence. Neurorehabilitation is defined as a goal directed process aimed at reducing the impact of disabling brain and spinal cord injury (NHS England). It is a concept and a principle that in practice should start as soon as the acute medical and surgical interventions start following an ABI. The process of neurorehabilitation should then not only continue during inpatient hospital stay but also should follow the child into the community, enabling their effective reintegration in the community.



In the UK, It is only in the last decade that paediatric neurorehabilitation is being gradually recognised as a service and only in 2014 did NHS England come up with a service specification and specialist commissioning agreement for paediatric neurorehabilitation. Thus, for the south west of UK, Bristol Royal Hospital for children (BRHC) neurorehabilitation team provides the tertiary neurorehabilitation services for children following ABI. It is a multidisciplinary team comprised of a paediatric neurologist, paediatrician with neurology interest, neuropsychologist, physiotherapist, occupational therapist, speech and language therapist, dietician, discharge coordinator, hospital school, play specialists, music therapist, nursing staff, junior doctors and child brain injury trust (CBIT) representative.

There is still a poor understanding of the needs of children with ABI in the community and consequently services in the community are not uniformly geared to meet the needs of children with ABI. There is an urgent need for educating and establishing neurorehabilitation services in the community for these children with ABI. This can be partly achieved by having a managed clinical network for paediatric neurorehabilitation, a kind of which has recently become operational in the southwest now. There is also a vision for establishing an outreach service from the specialist tertiary centre into the community. With political commitment and appropriate interdisciplinary working by Health, Education and Social services it is possible to allow children with ABI to achieve their potential and thus fulfil their rights (4)and we owe this to them.

References:

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3. Secondary attention deficit hyperactivity disorder in children and adolescents 5 to 10 years after traumatic brain injury. Nara ME et.al. JAMA paediatr.2018;172(5):437-443
4. The UN Convention on the Rights of the Child © United Nations, June 2010.

Conflict of Interest: I am part of the children's neurorehabilitation team at Bristol Royal Hospital for children.