Aman Sohal, J Child Adolesc Behav 2018, Volume 6
DOI: 10.4172/2375-4494-C2-008



# Survey of neurological outcomes in children with ventricular assist device insertion as a "Bridge" to cardiac transplant

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**Introduction:** Studies of Ventricular Assist Device (VAD), used in children as a "bridge" to transplantation, report favourable survival outcomes. However, neurological and neuropsychological outcomes are unknown.

**Participants:** A cross-sectional, single centred, pilot survey reviewing neurological and neuropsychological outcomes in surviving children with VAD insertion between July 1999 and February 2011.

**Methods:** Patients were identified using "Freeman Paediatric Cardiology Database" and neurological and neuropsychological assessments (WPPSI/WISC/WAIS >4 years, Bayley's assessment <4 years) performed between January 2011 and January 2012.

**Results:** Thirty-six children identified, 21 participated in survey. Median age (range) 5.75 years (1-16.4). Mean (range) of: VAD insertion 4.6 years (0.2-15.9); VAD support, 46.3 days (4-187); 20/21 underwent cardiac transplant, *Neurological assessment* –8/21 (38%) had gross motor abnormalities, 3/21 (14%) fine motor, 6/21 (28%) speech and language issues, 10/21 (47%) feeding issues. *Neuropsychological assessment*- 14 assessed, 7 refused. Mean full scale IQ (SD) in Weschler's group 98 (+/-17). Bayley's mean composite score (SD): cognitive 106 (+/-24), receptive language 100 (+/-28), expressive language 66 (+/-27), gross motor 32 (+/-32), fine motor 84 (+/-11). Parental concerns- Behaviour (23%), motor skills (9%), speech and language (9%) Provision of appropriate local services: Paediatrician 8/17 (47%), physiotherapist 8/11 (73%), Speech therapist 9/10 (90%) and psychology 7/10 (70%).

**Conclusion:** This pilot study in a small cohort demonstrated good neuropsychological outcomes, but difficulties in expressive language and gross motor skills were identified. There is a need for improvement in liaison services between specialist and local services. Long term studies of outcomes for these children are needed.

## Biography

Aman Sohal is the Clinical Director and Co-Founder of neuro pedia and also Consultant Pediatric Neurologist at Neuropedia in the Past Consultant Paediatric Neurologist at Sheikh Khalifa Medical City (Managed by Cleveland Clinic)

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