Autism spectrum disorder

Autism spectrum disorder (ASD) is a set of developmental disorders characterized by lack of social interaction, verbal and non-verbal communication in the first 3 years of life. It is also associated with several co-morbidities, including epilepsy, aggression, self-mutilating behaviour and obsessive compulsive behaviour. In some cases this can turn in to obsessive compulsive disorder (OCD). Nucleus accumbens (NAc) plays a key role in reward circuitry and is also involved in the control of OCD and aggression.

Converging evidence indicates that brain abnormalities in autism spectrum disorder (ASD) involve atypical network connectivity, but it is unclear whether altered connectivity is especially prominent in brain networks that participate in social cognition.

Several non-specialist mediated interventions have been developed and tested to address problematic symptoms associated with autism. These can be implemented with a fraction of cost required for specialist delivered interventions. This review represents a robust evidence of clinical effectiveness of these interventions in improving the social, motor and communication deficits among children with autism.

An electronic search was conducted in eight academic databases from their inception to 31st December 2018. A total of 31 randomized controlled trials were published post-2010 while only 2 were published prior to it. Outcomes pertaining to communication, social skills and caregiver-child relationship were meta-analyzed when reported in > 2 studies.

A significant improvement was noted in child distress (SMD = 0.55), communication (SMD = 0.23), expressive language (SMD = 0.47), joint engagement (SMD = 0.63), motor skills (SMD = 0.25), parental distress (SMD = 0.33) parental self-efficacy (SMD = 0.42) parent-child relationship (SMD = 0.67) repetitive behaviors (SMD = 0.33), self-regulation (SMD = 0.54), social skills (SMD = 0.53) symptom severity (SMD = 0.44) and visual reception (SMD = 0.29).

Non-specialist mediated interventions for autism spectrum disorder demonstrate effectiveness across a range of outcomes for children with autism and their caregivers.

A 42 years old Autistic lady suffering from OCD and aggression was offered Deep brain stimulation of the nucleus accumbens (NAc DBS) for her comorbidities of OCD and aggression. NAc was targeted using standard stereotactic methods and the postoperative scans confirmed the position of the active electrode to be within the NAc. The patient had a significant relief of her symptoms. At one-year follow-up the Yale-Brown obsessive-compulsive scale (YBOCS) score for OCD, excluding the item 1-5 of YBOCS, improved from 19 to 5. Her Hamilton depression and anxiety scores similarly improved from 20 to 15 and from 30 to 18. Social communication questionnaire - current for autism score improved from 26 to 16, the subscores for reciprocal social interaction improved from 13 to 8, for the communication from 5 to 4 and for the restricted, repetitive and stereotyped patterns of behaviour 6 to 3.

This case reports illustrates the role of NAc in OCD and aggression in an autistic patient.
Patients with symptomatic Chiari malformation Type I (CM-I) frequently present with headaches, neck pain, dysphagia, and balance disturbances. In children with autism spectrum disorder (ASD), diagnosing CM-I can be a challenging task. Moreover, even if symptomatic, some patients do not undergo further evaluation or management, as their presentations are attributed to autism and its myriad symptoms. Therefore, cranial MRI findings were reviewed after evaluating and treating patients with coexisting ASD and CM-I. In this paper, the authors report on 5 children with ASD and symptomatic CM-I, including their clinical presentation, imaging studies, management, and outcomes, and discuss the likely underrecognized coexistence of these conditions. METHODS All pediatric patients with ASD and cranial MRI conducted for any reason in the period from 1999 to 2013 were considered for analysis. All cases with concomitant symptomatic CM-I were eligible for this retrospective analysis. RESULTS One hundred twenty-five pediatric patients diagnosed with ASD had undergone MRI, and 9 of them had evidence of cerebellar tonsillar herniation. Five patients were symptomatic and underwent suboccipital craniectomy, a C-1 or a C-1 and C-2 laminectomy, and duraplasty with bovine pericardium or Type I collagen allograft. There were no intraoperative complications. All patients showed symptom improvement and/or resolution of presenting symptoms, which included headache, dysphasia, speech, and irritability. CONCLUSIONS There is no identified cause of autism. Children with ASD can be difficult to assess specifically in a neurological examination. Thus, cranial MRI considered when completing a comprehensive diagnostic evaluation. While cranial MRI is not a routine part of ASD evaluation, this study demonstrates that CM-I and ASD may coexist and be underrecognized. The study reinforces the importance of a comprehensive medical evaluation designed to elucidate neurological findings in children with impaired communication abilities and suggests the judicious use of neuroimaging.