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Letter to the Editor

## Pediatric autoimmune neuropsychiatric disorders associated with streptococcal infection treated successfully with a course of oral antibiotics

Pediatric autoimmune neuropsychiatric disorders associated with streptococcal infections (PANDAS) constitute a unique phenomenon prominently associated with obsessive-compulsive disorder (OCD) and tic disorder in child (Swedo et al., 2015). However, this diagnosis has been riddled with controversies, related to its diagnostic validity as well as management. We present here, the case of a child presenting with features suggestive of PANDAS, who was successfully treated with only a course of oral antibiotics.

A 4-year-old girl second born out of non-consanguineous marriage, presented to community psychiatry consultation OPD in an India, with two-month history of behavioural disturbances characterised by inappropriate laughter, irritability, intermittent aggressive behaviour without provocation. Moreover, the child had features suggestive of obsessive compulsive disorder characterised by repeatedly insisting her mother to give her a bath many times during the day since last 1 month. During bathing, she would take up to 40–60 min and start crying if her mother did not assist her. She was also observed to wash her hands repeatedly (approximately 7–8 times/day) for 20–30 min. On asking why she was doing so, she would not give any explanation but insist that her hands were dirty. She would start crying or try to hit the mother if she tried to prevent her from washing her hands or refused to give her a bath. She was unable to go to school for the last two months primarily due to her behavioural disturbances. Her mother also observed that she was unable to dress herself for the last 3 weeks and required assistance. There was no history of headache, seizure, weakness of limbs, abnormal movements, joint pain, respiratory distress, rash, head injury, bowel and bladder incontinence. She had history of high grade fever, cough, sore throat and swallowing difficulty 2 months preceding the behavioural changes, for a duration of 10 days. The child was born out of full-term normal vaginal delivery at hospital, had no adverse perinatal events, attained all developmental milestones at appropriate age prior to the illness and immunized completely for age according to Universal Immunization Procedure. There was no family history of OCD any other psychiatric complaints. On examination, the child was irritable and not amenable for interviewing. General physical examination and systemic examination including neurological examination revealed no abnormal finding except grade II enlarged tonsils bilaterally without congestion or purulent discharge. On MSE, obsessive thoughts of contamination with poor insight was elicited. Score on Children's Yale Brown Obsessive Compulsive Scale-Parent Report (C-YBOCS-PR) was 26, indicating severe OCD. Complete blood count, serum electrolytes, renal and liver function tests revealed no abnormality. Chest X ray and ECG were also normal. As clinical profile of the patient was suggestive of PANDAS (behavioural abnormality, OCD and temporal relationship with acute pharyngitis), so after opinion from pediatric team, oral coamoxiclav was started at 50 mg/kg/day to eradicate streptococcus and throat swab was sent beforehand to document the colonisation of streptococcus and ASO titres were also done. ASO was found to be high (416 Todd units) and throat swab culture was positive for group A beta haemolytic streptococcus. Simultaneously MRI Brain and EEG was done to rule out any organic cause which detected no abnormality. SSRIs were not started concomitantly for her OC symptoms in view of her age. Over the next two weeks, there was a marked decrease in irritability, inappropriate laughter as well as repeated hand washing. Over another 3 weeks, patient was gradually able to do her daily activities like dressing herself without assistance. Hand washing and taking bath further decreased and there was a reduction in C-YBOCS-PR score to 5. Her sleep and appetite improved. Over a period of two months her complaints of intermittent sore-throat and pain on swallowing also completely resolved. Patient was able to resume schooling after two months. Her improvement was maintained for the next five months.

In our patient, only one episode of neuropsychiatric symptoms was demonstrated, with documented evidence of GABHS infection (highly raised ASO titres and positive throat swab culture). Although a single high titre, in comparison to serial acute and convalescent titres, is not diagnostically reliable, but it may be considered contributory if levels exceed twofold above the laboratory's stated upper limit of normal (Chang et al., 2015). Due to a paucity of evidence regarding treatment of PANDAS with immunosuppressive agents and antibiotics, it has been recommended to treat these patients only with conventional therapy OCD (Leonard and Swedo, 2001). However, children with PANDAS appear to be unusually sensitive to the side-effects of SSRIs and other medications (Mohapatra et al., 2013). Therefore, a more judicious treatment for an acute episode of PANDAS should be an eradication of the streptococcal infection causing the symptoms (if it is still present) by antimicrobial medication. Successful resolution of symptoms in our patient with antibiotic treatment, lends support to the same. A prospective study in 12 patients with new-onset PANDAS demonstrated dramatically rapid resolution of OCD and other neuropsychiatric symptoms following antibiotic treatment appropriate for GABHS infection (Murphy and Pichichero, 2002). Antibiotic treatment directed at GABHS eradication at the sentinel episode might be of benefit as it will decrease the risk of exposing children to SSRIs for long duration for their OC symptoms. Also, a good cross referral between the paediatricians and the psychiatrists can serve in decreasing and eliminating the morbidity and the disability which are associated with this disease.

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