

PANDAS Physicians Network

Symptom Severity Based Treatment for PANDAS/PANS



I. SYMPTOM SEVERITY BASED TREATMENT

TREATMENT OF MILD ILLNESS

Children with mild symptoms have obvious impairments as a result of their PANDAS symptomatology, but these are limited to certain situations or settings. For example, the child might need a parent to stay with him as he falls asleep, but he is able to attend school or go to a friend's house (perhaps with frequent phone calls for reassurance). The obsessive-compulsive symptoms take up only 1 to 2 hours of the child's day and do not cause overwhelming obsessional fears. The symptoms may cause minor disruptions at home and in school, but these are manageable with reasonable accommodations. Overall symptom severity is in the "troubled but tolerable" range.

Treatment of mild illness may include: antibiotics, corticosteroids, anti-inflammatories, or tincture of time.

Antibiotics may prove helpful as a treatment option for mild to moderate cases. An early study by Marie Murphy, Mike Pichichero, and others showed that prompt treatment with antibiotics eradicated OCD symptoms in 8 of 12 children presenting with PANDAS. More recently, Dr. Tanya Murphy and her colleagues at University of South Florida have demonstrated benefits of antibiotics treatment, even among children without demonstrable infections.

When given within 1–3 days of symptom onset, oral corticosteroids bursts can have dramatic benefits. Oral corticosteroid bursts may hasten recovery and minimize residual symptoms. If symptoms continue beyond 2 weeks, oral nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen or naproxen may be beneficial.

PANDAS (like Sydenham chorea) is a semi-acute illness, which means that symptoms can disappear over a period of weeks to months without any intervention. For this reason, "Tincture of time" might be an appropriate therapy for children in the mild to moderate severity range. Since the child could recover on his own, any treatments used to hasten the process must not carry significant risks. Because of this, IVIG and plasmapheresis are not deemed appropriate treatments for children with mild to moderate symptoms. Both IVIG and plasmapheresis are "invasive" procedures which carry a number of associated risks. (Please see PPN Treatment Options: IVIG).

TREATMENT OF MODERATE ILLNESS

Children with moderately severe symptoms of PANDAS have significant anxiety and OCD which occupies 50% to 70% of their waking hours and causes significant interference with daily activities, but does not overwhelm them continuously. The rituals or separation anxiety may prevent the child from attending school, but he would be able to go to visit his grandparents (if parent is along) or have friends come over for brief periods. The ancillary symptoms are similarly impairing, but do not incapacitate the child.

Immunomodulatory therapy is justified in such cases to relieve suffering and hasten recovery. Intravenous immunoglobulin (IVIG) is likely to be the preferred therapy for moderately severe to severe cases.

As with a mild form of PANDAS/PANS, corticosteroids and NSAIDs may be beneficial, especially when implemented in the earlier stages of symptom onset. A positive response to steroids is a good indication that IVIG therapy will be helpful; however, a tepid response is not a predictor of IVIG failure.

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Antibiotics are also useful in the treatment of moderately ill children. As discussed below, antibiotics should be prescribed at “treatment level” dosages for 2 to 4 weeks to eradicate occult infections (e.g. sinusitis) before the dosage is reduced to a prophylactic level. Anecdotal reports suggest that antibiotics may be sufficient to produce remission of PANDAS symptoms within 2 to 3 weeks, so antibiotics should be tried before initiating IVIG or other immunomodulatory therapy. Prophylactic antibiotics are often useful in the management of PANDAS, as they help to prevent strep-triggered exacerbations.

Cognitive behavior therapy should be started as soon as the child can tolerate it. In the interim, the child and parent should receive supportive therapy, including education about the “dos and don’ts” of managing OCD and separation anxiety. For example, as described above, parents will want to resist accommodating their child’s OCD, as their efforts may provide short-term anxiety relief, but it comes at the expense of longer-term increase in symptoms (due to the “rational irrationality” of OCD).

Psychotropic medications, including SSRIs, could also be considered, but **MUST** be started at an extremely low dose with a very slow upward taper to avoid activation, agitation, akathisia, and other adverse effects of the drugs. (Please see, [PPN Treatment Options: SSRIs.](#))

TREATMENT OF SEVERE TO EXTREME ILLNESS

Extremely severe cases are defined as those in which the neuropsychiatric symptoms have life-threatening consequences. For example, children with significant weight loss (>10-15% of body mass) due to anorexia or obsessional food/eating restrictions related to fear of contamination, fear of choking or vomiting and others; children with extreme impulsivity (and behavioral regression), such as the child who attempts to jump off a roof because he thinks he can fly; or children with suicidal ideation or self-injurious behavior, e.g., trying to jump from a moving car or threatening self or others with knives or fire. In these cases, the child’s health and well-being is threatened by the PANDAS symptoms and aggressive treatment is warranted.

Children with severe symptoms of PANDAS are suffering from extreme anxiety (separation or generalized) and obsessional fears that occupy 80% to 100% of their waking hours or more. The OCD symptoms prevent the child from attending school, playing with friends/alone, and accomplishing tasks, such as showering or toileting. Because of the separation anxiety, the child is reluctant to leave the house and sticks closely to his parents – following them into the bathroom and insisting on sleeping in the parents’ bed (or having the parent sleep in his). In addition to the OCD and anxiety symptoms, the child may have extreme irritability, increased aggression and emotional lability, and a dramatic personality change.

The treatment options listed for mild to moderate illness may be considered for patients experiencing an extreme form of PANDAS/PANS. In addition, plasmapheresis might be the first-line treatment for severe illness because it has been shown to produce the greatest degree of symptom improvement over the shortest period of time.

If plasmapheresis is not available, then IVIG would be a reasonable alternative. Should obtaining plasmapheresis or IVIG take time, the physician could start the patient immediately on a therapeutic dose of antibiotics. In addition to the immunomodulatory therapies, supportive therapy would include re-feeding protocols for the children with anorexia; cognitive behavioral therapy for obsessional food/eating restrictions and the self-injurious behaviors; and educational/supportive therapy for parents (and later for the child) to ensure that symptoms do not escalate further. [Obsessive-compulsive symptoms of PANDAS behave similarly to those of “garden variety” OCD and will increase in severity if accommodated by caregivers. For example, a child who fears that foods are

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contaminated may find it increasingly difficult to eat anything if his parent has gone to great lengths to present him with only sterilized or “safe” foods, as the parents’ actions reinforce the (irrational!) obsessional fear; i.e., the child begins to believe that his obsessional fear is rational because his parents are acting as if it is.]

Psychotropic medications may be useful, but should be selected carefully, as drugs which activate the central nervous system (some of the SSRIs) often produce more side effects. All drugs must be started at a very low dose and tapered upwards gradually in order to increase tolerability. (Please see PPN Treatment Options: SSRIs.)

II. CHRONIC-STATIC COURSE AND REFRACTORY DISEASE COURSE

Most patients with PANDAS/PANS remit with appropriate treatment. For a few children, the clinical course may evolve to become a chronic autoimmune condition. For such cases, more aggressive treatment may be warranted.

For patients who no longer respond to the PANDAS/PANS treatments, the focus may shift to a rehabilitation mode.

III. LONG TERM PROGNOSIS

There have been no long-term studies of PANDAS patients. However, clinicians who treated PANDAS patients when they were children and are now young adults report that their treated patients are highly functioning and, in many cases, without any or significant OCD, tics, and comorbid symptoms.

Many of the original patients of NIH are now 15 to 20 years older and are healthy. Others have also remained symptom-free, although when infected with a pathogen, especially Group A strep, must use antibiotics to control the flare-up periods.

IV. OVERVIEW AND HISTORICAL CONTEXT

Symptoms of PANDAS are hypothesized to result from immune dysfunction at one (or more) of three levels – local dysfunction related to cross-reactive antibodies recognizing CNS antigens; regional dysfunction related to inflammation of the basal ganglia; and systemic abnormalities of chemokines or cytokines, with resultant disruption of CNS functions. The hypotheses are based on the disease mechanisms proposed for Sydenham chorea (SC), the neurologic manifestation of rheumatic fever, and clinical observations demonstrating that obsessive-compulsive symptoms (OCD) appear in about two-thirds of SC patients. The OCD symptoms of SC patients begin 2 to 4 weeks before the onset of the chorea, suggesting that OCD might be a forme fruste of Sydenham chorea. A trial of immunomodulatory therapies for Sydenham chorea demonstrated benefits not only for the choreoathetoid movements, but also the OCD symptoms. Improvements were seen with plasmapheresis (5 single-volume exchanges over 8 to 10 days); intravenous immunoglobulin (IVIg at 1 gm/kg x 2 days); or prednisone treatment (21-day course of immunosuppressive doses, with taper).

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A placebo-controlled trial of plasmapheresis and IVIG for PANDAS was conducted at the NIH in the late 1990's, with children randomly assigned (by the NIH pharmacy) to receive plasmapheresis (unblinded) or IVIG/sham IVIG (see Perlmutter et al, 1999). The IVIG and sham IVIG (placebo) arms were blinded so that 18 of 19 of the subjects left the NIH Clinical Center believing that they had received active drug (10 had received placebo). At one month evaluations, there was no mistaking who had received active drug and who had received placebo. Placebo infusions produced no improvements in OCD or tic symptoms, while 100% of the children receiving IVIG or plasmapheresis were significantly improved. As shown in the graph below, the average improvement in OCD symptoms was 45% for the group receiving IVIG and nearly 65% for the children receiving plasmapheresis, with several subjects achieving complete symptom remission or symptoms improved to the subclinical level. The results of the trial were sufficiently robust to cause the American Society of Apheresis to include plasmapheresis as a treatment option for PANDAS, as well as for Sydenham chorea (see Weinstein, 2008). Although plasmapheresis and IVIG appear to provide the best long-term outcomes, they are expensive and involve risks which are not warranted in the treatment of mild to moderate cases of PANDAS; even for more severely ill patients, their use may be reserved for treatment of patients who fail to respond to antibiotics and other non-invasive therapies, as described below.

V. ADDITIONAL RESOURCES

Plasmapheresis:

www.pandasppn.org/plasmapheresis

IVIG:

www.pandasppn.org/ivig

Steroid Therapy:

www.pandasppn.org/ppn-steroid-therapy-use

Antibiotics

<https://www.pandasppn.org/treatment-of-panspandas-with-antibiotics>

Cognitive-behavioral therapy (CBT)

<https://www.pandasppn.org/cognitive-behavioral-therapy>

SSRI's

www.pandasppn.org/ssris

OTHER TREATMENT OPTIONS

www.pandasppn.org/other-treatment-options