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## Autoantibodies normalize after a month in tonsillitis and persist in Sydenham's chorea

Hilla Ben-Pazi

Shaare Zedek Medical Center, Israel

**Background:** Most children have uncomplicated streptococcal tonsillitis. A minority develops Sydenham's Chorea (SC), a post-streptococcal, neuropsychiatric disorder associated with anti-neuronal antibodies. While several autoantibodies such as anti-Dopamine receptor antibodies were found elevated in children with SC compared to controls their existence and role in uncomplicated tonsillitis has not been studied. We hypothesized that unique autoantibodies would be detected in children with Sydenham's chorea and not in children with tonsillitis.

**Method:** We examined autoantibody profile from children with acute (aSC; n=35) and persistent (pSC; n=11) SC compared to age-matched controls with streptococcal tonsillitis within the past month (ST; n=28) and healthy children (HC; n= 32). Sera were examined for Anti-Streptolysin-O (ASLO) Anti-Dopamine-1-receptor (D1R), Anti-Dopamine-2-Receptor (D2R), anti-tubulin and anti-Lysoganglioside (LG) titers in respect of time for clinical presentation.

**Result:** ASLO titers were high but similar in children with tonsillitis and aSC ( $p=0.071-0.51$ ). Anti-D1R antibody was higher in aSC than in tonsillitis after 2 weeks ( $p=0.02-0.078$ ). Anti-D2R antibody titers were similarly high in aSC and tonsillitis ( $p=0.59$ ) participants compared to controls. Anti-LG was higher among children with aSC compared to tonsillitis after 2 weeks ( $p=0.0081-0.026$ ). Anti-tubulin was lower in aSC compared to the tonsillitis group during the first 2 weeks only ( $p=0.01$ ). Combined titers were higher in children with SC compared to controls from 2 weeks and beyond (Composite Measure of ASLO+ D1R+D2R+ LG was  $p=0.005-0.049$ ).

**Conclusion:** Autoantibodies are higher in children with SC compared to children with tonsillitis beyond two weeks. A composite test may have implications on diagnosis and treatment of this autoimmune disorder.

### Recent Publications

1. Ben-Pazi H, Stoner J A, Cunningham M W (2013) Dopamine receptor autoantibodies correlate with symptoms in Sydenham's chorea. *PloS One*; 8(9): e73516.
2. Dale R C, Merheb V, Pillai S, Ben-Pazi H, et al. (2012) Antibodies to surface dopamine-2 receptor in autoimmune movement and psychiatric disorders. *Brain: A Journal of Neurology*; 135(11): 3453-3468.

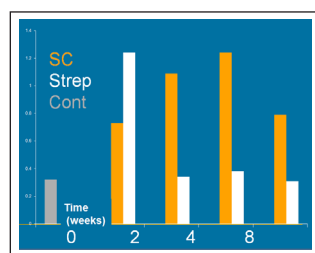
### References

1. Teixeira A L Jr, Maia D P, Cardoso F (2005) UFMG Sydenham's chorea rating scale (USCRS): reliability and consistency. *Mov Disord*; 20(5): 585-591.
2. Cardoso F, Vargas A P, Oliveira L D, Guerra A A, Amaral S V (1999) Persistent Sydenham's chorea. *Movement disorders official Journal of the Movement Disorder Society*; 14(5): 805-807.
3. Garvey M A, Snider L A, Leitman S F, Werden R, Swedo S E (2005) Treatment of Sydenham's chorea with intravenous immunoglobulin, plasma exchange or prednisone. *Journal of child neurology*; 20(5): 424-429.

### Biography

Hilla Ben-Pazi is a Child Neurologist and Medical Entrepreneur, Director of the Movement Disorders Clinic at Shaare Zedek Medical Center in Jerusalem and Founder of NeuroCan. She has completed her studies at Hebrew University Medical School and was trained in Pediatrics at Hadassah. She has completed her Fellowship in Pediatric Neurology at Shaare Zedek. She is specialized in Pediatric Movement Disorders from Stanford University, California, USA in Telemedicine (FutureMed, Singularity University; Telemedicine Management, University of Alaska).

BenPazi@gmail.com



**Figure-1:** Composite Measure (D1R+D2R+ LysoGN) over time (months)