Antibodies for strep throat linked to OCD in mice

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A study in mice gives support to a suspected form of pediatric obsessive-compulsive disorder (OCD) thought to arise from an inappropriate immune response to common throat bacteria. If verified, the study, published online in this week’s Molecular Psychiatry, would distinguish this disorder as a distinct subset of OCD and establish it as one of the first cases of a psychiatric syndrome caused by an infection.
Strep throat bacteria, GABHS, are known to cause autoimmune disorders with symptoms such as fever and uncontrolled tics of the face or extremities in susceptible individuals. This has prompted some scientists to suspect that GABHS plays a role in a controversial syndrome known as Pediatric Autoimmune Neuropsychiatric Disorders Associated With Streptococcal infections (PANDAS) – a rapid-onset and episodic form of OCD and tic disorders observed in some children.

Using a mouse model of PANDAS, Mady Hornig and colleagues demonstrate this suspected link between GABHS antibodies and the psychiatric symptoms of the disorder. To build their mouse model, the team vaccinated mice with an inactivated form of the GABHS bacteria and cultivated a population of mice that exhibited repetitive behaviours reminiscent of children with PANDAS. When they injected mice without strep or autoimmune problems with the antibodies isolated from the PANDAS mice, they found that the second set of mice produced symptoms similar to the core features of PANDAS.

The researchers hypothesize that antibodies against the GABHS bacteria could be sufficient to induce PANDAS.

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