

Transdermal Secretin for Autism – A Case Report

Davis W. Lamson, MS, ND, and Steven M. Plaza, ND

Abstract

Secretin hormone given daily in transdermal cream was associated with marked and sustained developmental progress in an aphasic two-and-a-half year old child diagnosed with autism.

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Introduction

A number of complementary and alternative medicine treatments are reported to be useful in support of children with autism (digestive aids, avoidance of gluten or other foods, nutritional supplementation, etc.). The use of secretin (a 27-amino-acid polypeptide gastric hormone, previously used as a diagnostic tool in pancreatic function evaluation) has furnished dramatic reports of improvements in speech, behavior, responsiveness to others, and somatic improvements in sleep and bowel patterns.

While the use of secretin as supportive therapy for autism has been reported both positively^{1,2} and negatively,^{3,4} the treatment continues to show dramatic developmental gains in a number of children with autism.² Autistic spectrum disorder appears biologically heterogeneous, so it may not be surprising that response to individual therapies varies widely from child to child. Since at present there is no confirmed method for determining which children will respond positively to secretin, the authors suggest a clinical trial is an appropriate protocol in almost all cases of autism. Such a trial is now considerably easier on patient and parents than previously when intravenous injection was the only available route of administration.

In recent years transdermal creams have been used to administer many medications, particularly hormones. Although the administration of secretin in a transdermal cream appears to violate the expectation for large molecules (such as sizable polypeptides) to not cross the skin boundary, in our experience the method can be dramatically effective and eliminates the emotional trauma of injection and the decreasing effectiveness of an injection over time. The cream is applied to the child's back, usually at bedtime, furnishing a periodic low-level dosage. Such a cream is also much less expensive than periodic injections in the office. The following case study may encourage more trials of transdermal secretin treatment in autism.

Davis W. Lamson, MS, ND – Coordinator of Oncology, Bastyr University, Kenmore, WA. Private practice, Tahoma Clinic, Kent, WA. Product consultant, Thorne Research.
Correspondence address: 9803 17th Ave NE, Seattle, WA 98115. E-mail: davisl@seanet.com

Steven M. Plaza, ND, LAc – Research fellow at Tahoma Clinic, Kent WA. Private Practice, Ballard Health Center, Seattle, WA. E-mail: drsteve@foxinternet.net

Case Study

K.S., a two-and-a-half year old male, was first seen in clinic in December 2000. He appeared physically healthy on examination; however, behavior was unruly and absent focused attention and speech. Independent diagnoses of autism had been provided in March 2000 by a psychiatrist, two pediatricians, and a speech pathologist. K.S.'s parents expressed interest in a secretin trial because of its reputation for effectiveness among the parents of other autistic children.

K.S.'s parents related that problems had begun at 12 months of age following an MMR (measles, mumps, rubella) vaccination. Twelve months of age is apparently the standard in Canada for MMR vaccination. K.S. became sick with coughing and vomiting within 24 hours of the vaccination and was ill for two months. There was suspicion of deafness within the first month after the vaccination because K.S. stopped learning words at age 13 months. It was reported that he lost all speech for two months.

K.S.'s mother keeps a detailed journal along with laboratory records because of his many apparent sensitivities. It had been previously determined that the child registered elevated levels of eight toxic metals by hair analysis, subnormal serum levels of multiple amino acids, and a stool culture showing overgrowth of *Candida*, *Klebsiella*, *Pseudomonas*, and *Proteus* species. The mother had been attempting total gluten and dairy avoidance for several months, which she thought had resulted in better attention and addition of a word or two.

Several therapies were suggested in clinic in December 2000: (1) a nutritional drink of amino acids, vitamins, and minerals prepared in a blender; (2) pancreatic digestive enzymes with food; (3) antibiotic treatment for the unusual stool bacteria along with acidophilus between dosages; and (4) synthetic human secretin in a modified PLO gel (pluronic lecithin organogel) one clinical unit per dose

(according to his weight of 32 lbs.) applied to the back at bedtime. (The secretin cream was prepared by Key Pharmacy, Kent, Washington.) It should be noted that the secretin cream contained a minute amount of DMSO – 0.02 mL/dose (some physicians working with autistic children have found therapeutic benefit from DMSO). The pancreatic enzymes were objectionable to K.S. and were discontinued. Antibiotic treatment seemed responsible for the resolution of long-standing diarrhea; improvement was noticed within 24 hours after starting antibiotics (as would be expected from the specified bacteria). Diarrhea returned within 24 hours after discontinuation of the antibiotic treatment. As the secretin applied at bedtime seemed to cause screaming episodes, it was shifted to a 2:30 p.m. application without such reaction.

All therapies except secretin were begun soon after the initial visit December 28, 2000, with minor improvements noticed by K.S.'s mother. Secretin therapy was begun January 20, 2001, and less than 24 hours later K.S. said his first new word in several months: "cookie." The following day he said, "dinosaur," quickly followed by "flower" and "mama." By February 22, 2001, it was reported that K.S. had a vocabulary of 108 words, was singing five songs, made three-word sentences, imitated a cat, pointed, and said "show me" for instructions. By accident he was not given secretin one day, and lost all speech and became unruly and unfocused – serving as his own control. After resumption of therapy with good results, the family wished to know for certain it was the secretin. Upon K.S. not being given secretin for three more days, he stopped playing, threw tantrums, did not recognize his baby sitter, and became aphasic. Upon resuming secretin treatment, all speech and developmental behavioral gains were restored within 24 hours.

K.S. continues to have a tendency to loose stools and is hypersensitive to a number of unexpected foods and nutrients. Some foods

will cause loss of speech, thrashing, and lack of focus, but these symptoms are not long lasting. Since therapy with secretin, there has been no head banging or biting, behaviors he previously engaged in. Medical attention is continuing in order to better resolve sensitivities and digestive problems. Developmental progress continues at the time of this writing in May 2001.

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