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Etiology of autism and camel milk as therapy

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Abstract. The etiology of many autistic cases is based on a primary autoimmune disease, affecting an intestinal enzyme responsible for the formation of amino acids from the milk protein casein. Instead, the breakdown of the caseins, primarily beta-casein and beta-lactoglobulin, is to a powerful opioid, casomorphin. The opioid leads to typical cognitive and behavioral symptoms. Eventually the casomorphin causes brain damage. Animal experimentation has shown that casomorphin causes autistic-like symptoms. It is therefore, advisable to restrict milk and milk products that can lead to the formation of casomorphin. As camel milk does not contain beta-casein and beta-lactoglobulin, camel milk does not lead to autism symptoms. In addition, camel milk contains protective proteins, including the immunoglobulins necessary for maintaining the immune system and nutritional advantages for brain development. A few observations of the effect of drinking camel milk are presented and a discussion on the effect that camel milk had on various age groups.

Keywords: autoimmune, opioids, casomorphin, dromedary, Israel

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INTRODUCTION

Reports from parents of autistic children that camel milk had helped their children led to the present study in an attempt to explore whether a possible cause of autism was related to cow's milk causing an autoimmune disease and whether the special properties of camel milk could be of benefit.

In 1943, Leo Kanner introduced the name "early infantile autism" into the English language. At the same time, Hans Asperger described a milder form of the disorder that became known as the "Asperger syndrome". If a child has symptoms of either of these disorders but does not meet the specific criteria for either, the diagnosis is classified as "pervasive developmental disorder" (PDD), childhood disintegrative disorder (CDD) or "not otherwise specified" (NOS).

Although once assumed a rare disease, autism has reached the stage of an epidemic in industrialized countries (1). Before 1960, most investigators did not consider childhood autism a distinct illness but rather considered it a childhood form of schizophrenia. Nowadays, it is accepted that schizophrenia and childhood autism are different entities. Typically, autism appears during the first 3 years of life, characterized by behavioral and cognitive symptoms. Many children exhibit repeated body movements such as hand-flapping or rocking. In some cases, they may display aggressive or self-injurious behavior and have difficulty in accepting changes in routine. The primary damage in autism is assumed to occur in the brain. This view has been confirmed by postmortem and magnetic resonance imaging (MRI) studies, which have shown that many major brain structures are implicated in autism. Other research focuses on the role of neurotransmitters such as serotonin, dopamine, and epinephrine.

AUTISM AS AN AUTOIMMUNE DISEASE

Possibly immune factors initiate the neurological disorders of autism (2), but the mechanisms are not clearly understood. The potential of interaction between vaccination and autoimmune diseases (3,4) is still hotly debated, whereas viral and bacterial infections can cause autoimmune reactions. Another finding was that children with autism had significantly higher levels of antibodies against both gluten and cerebellar peptide (4), together with a formation of immunoglobulin antibodies, mainly anti-IgA, IgM and IgG.

Reports from many parents suggest a direct connection between the onset of autism and the time of inoculations (personal communications in practice). One should remember that as many anecdotal observations have led to great medical discoveries, such observations should not be readily discarded. One theory is that one cause of auto-immune-activated autism is 'toxic' substances in vaccines. The MMR (mumps, measles, rubella) vaccine has been the main focus of such studies, and there appears to be a direct link between MMR and inflammatory bowel syndrome (5), suggesting a link with autistic enterocolitis. This theory gains credence because poly-vaccinations in dogs also give rise to autoimmune diseases (6).

DIET AND AUTISM

Enterocolitis, a symptom in many autistic children (7), is often accompanied by *Helicobacter pylori* infection, lactase deficiency, and pancreas insufficiency. It has been suggested

reaction of persons who suffer from a deficient immune response (23,24) to camel milk.

Small immunoglobulins probably pass from the camel's blood into its milk and then into the human blood stream. Here their comparative simplicity, high affinity, specificity, and potential to reach and interact with active sites allow for penetration of dense tissues to reach the antigen, explaining the positive actions of camel milk in autoimmune diseases in general.

OBSERVATIONS OF THE ACTION OF CAMEL MILK ON AUTISM

Three cases out of tens of similar observations showed the following:

A young 4-year old girl (from New York), who suffered from severe periods of rage; picky-eater; no eye contact or other cognitive or communicative skills and did not talk was considered normal after only 40 days of drinking camel milk. She started talking, wanted hugs, was calm, had a varied diet, and was working on a computer.

A 15-year old boy with serious symptoms of autism, similar to those of the young girl, began drinking camel milk because of enterocolitis and showed improved cognitive and communication skills within 1 month. Although he never spoke, a professional examination (by the Israel National Insurance Institute) revealed that he was no longer autistic but did suffer from brain damage.

In a hostel for autistic youths, all about 21 years of age, camel milk was consumed each day for 2 weeks, replacing all other milk. Within 24 hours, the youths became quieter, one stopped self-mutilation, and another had improvement of persistent mouth sores. This phenomenon of rapid reaction to the milk was seen with other autoimmune diseases as well. Although the initial reaction was rapid, longer periods were required to obtain a lasting effect.

Possibly certain symptoms accompanying autism, enterocolitis, H. pylori infection, and lactase deficiency (9), might be cured with camel milk as well. As autism is an autoimmune disease, rehabilitating the immune system through the use of camel milk, rather than depressing it with conventional steroid therapy. In young autistic children, who excrete casomorphin, but do not have brain damage, camel milk could lead to complete recovery.

ACTION OF CAMEL MILK IN AUTISTIC CHILDREN: A HYPOTHESIS

Although autism is a heterologous group of manifestations, the neurological symptoms are secondary. The primary target is the alimentary canal, where the breakdown of casein malfunctions, leading to the formation of opioids that eventually cause brain damage. The common symptoms of enterocolitis, 'leaky gut syndrome', picky eaters, and lactose intolerance, all suggest a dysfunction of the alimentary canal and explain why camel milk is so beneficial.

The prevalent assumption that autism is a neurological phenomenon, perhaps related to an autoimmune disease, is given credence by the finding that intravenous immunoglobulin treatment (INIG) reduces the symptoms of aggravation, cognitive, and behavioral symptoms (25). Drinking camel milk has the same result; apparently camel milk acts in the same way as INIG treatment, therefore establishing the connection between milk and the immune activity. On cessation of INIG treatment, the symptoms return, again suggesting that there was no 'healing' of the basic problem. The same outcome was found for camel milk in children older than 15 years. Although children younger than 10 years old showed an apparent complete recovery from autism after strict removal of cow's milk from their diet, actually only the symptoms were suppressed.

It is therefore possible that if camel milk is provided at an early enough age, brain damage can be prevented. This result appears to be true from parents' observations that young children react more positively than older ones.

The authors in no way suggest that camel milk can cure or even help every child with autism. This article merely shows that autism connected to ruminant casein could be helped with camel milk.

Some words of caution: Do not allow any child to drink camel milk that has not come from a well-controlled herd. In addition, children require different amounts of milk per day, according to the severity of the symptoms and expert advice is necessary. It is advisable that use of camel milk be under the control of a physician

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