A – Normal control cerebellum
B – Autistic brain with loss of Purkinje cell layer (P) and granular cell layer (G)

Vargas et al., 2005

INTRODUCTION:

A. S. is a 7 years old boy diagnosed with autism. Mother was 29 years old at birth. Delivery was vaginal and full term with no problem. He was a good baby, a good sleeper and a good eater. He didn’t crawl. He preferred round spinning toys. He had good eye contact and language comprehension. Family had seen the first signs at 2½ years old. He was not speaking! Family history shows biochemical aftermath secondary to Gastrointestinal inflammation at all family members. Mother has zink deficiency and constipation. Father has zink deficiency and lactose intolerance. Maternal grand mother has high blood pressure, diabetes mellitus and astma. Paternal grand mother has high blood pressure. Maternal and paternal grand fathers have constipation.

METHODS:

During consultation we looked to brain anatomy with Magnetic Resonance scan (MR) and brain function with perfusion SPECT scan (SPECT). He had abnormal SPECT revealing focal areas of decreased perfusion. By contrast he had normal MR findings (no signs of oxygen delivery problem to brain or signs of any infectious disease). As a cause for neuroinflammation, A.S. had very elevated levels of lead in urine provoked with DMSA 30mg/kg. The fact that heavy metals are neurotoxic, they destroy the nervous system and it is a well known fact within medical science. Studies show that autistic children have high levels of mercury and/or lead in their blood and tissues, Hyperbaric oxygen therapy (HBOT) increases in blood flow independent of new blood vessel formation, decreasing levels of inflammatory biochemicals, up-regulation of key antioxidant enzymes and decreasing oxidative stress, increased oxygenation to functioning mitochondria, increased production of new mitochondria, by-passing functionally impaired hemoglobin molecules secondary to abnormal porphyrin production, improvement of the immune system and the autoimmune system, decreasing the bacterial and yeast load systemically and in the gastrointestinal system, decreasing the viral load found systemically and the viral load in the gastrointestinal mucosa. HBOT increases by eight-fold the number of circulating stem cells throughout the body, increases in the production of stem cells in the bone marrow with transfer to the central nervous system, increases direct production of stem cells by certain areas in the brain. Stem cells, also called progenitor cells, are crucial to the repair of injured tissues and organs. The possibility that oxidation also may help rid the body of heavy metals. As a result of both studies, we conclude that the areas with decreased perfusion were all neuroinflammatory areas (dying neurons) secondary to toxic overload. We planed to do “HBOT + chelation combination” for treatment: HBOT for neuroinflammation and chelation therapy for lead intoxication.

RESULTS:

In 26 months; after totally 90 sessions of HBOT at 1.5 ATA with 100% oxygen for 60 minutes and using a special chelation protocol at the same time, he showed significant improvement on speech, judgement, learning, fine motor and gross motor functions. He was more calm and happy. Better sleeping, better behaviour and more interest with environment were other changes after the therapy. Lead levels were decreased from 45 mic/g creatinin to 14 mic/g creatinin in DMSA provoked urine and control brain perfusion SPECT showed increased perfusion at the inflammatory areas, comparing with previous scan.

CONCLUSION:

In this case, a combined treatment with “HBOT and chelation” showed a great success to decrease the symptoms secondary to neuroinflammation in children with autism.

KEY WORDS: HBOT, Chelation, SPECT, Neuroinflammation, Autism.

REFERENCES: