

TREATMENT OF NEUROLOGICALLY IMPAIRED ADULTS AND CHILDREN WITH "MILD" HYPERBARIC OXYGEN (1.3 ATA AND 24% OXYGEN)

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INTRODUCTION

The senior author has a special interest in toxic encephalopathy and documented its features in a number of publications. These show that SPECT brain scans become abnormal after neurotoxic exposure and can continue abnormal for years after toxic exposure has ceased (1,2). These abnormal findings can be further confirmed with neuropsychological tests and with neurological physical examinations and then become part of a protocol for the evaluation of a chemically-injured patient (3).

Since SPECT scans in patients with toxic encephalopathy typically show hypoperfusion and therefore decreased oxygen supply to certain parts of the brain (mostly temporal but also frontal and parietal lobes) the senior author initially began to refer patients for "regular" HBOT. This had promising results but was expensive. When a portable chamber became available for office use, we started to treat patients with that approach ("mild" HBOT) in our office. The results of a pilot study were presented by poster (4) and partially discussed in a Letter to the Editor ("Correspondence") (5) which referred to a paper (6) on treatment of cerebral palsy with HBO.

While our initial study was only in adults with toxic encephalopathy, we have since begun to study children with toxic encephalopathy and autism. This became possible when a database for normal children became available.

DISCUSSION

Our data show that considerable improvement can be obtained in adults and children with toxic encephalopathy by using "mild" HBOT in a portable chamber. Further improvement occurs when HBOT is continued beyond the initial ten treatments discussed here. As a matter of fact, we recommend a total of twenty to sixty treatments in our office. If all parties are then convinced of success we recommend that a portable chamber be purchased and used at the patient's home on an as-needed basis.

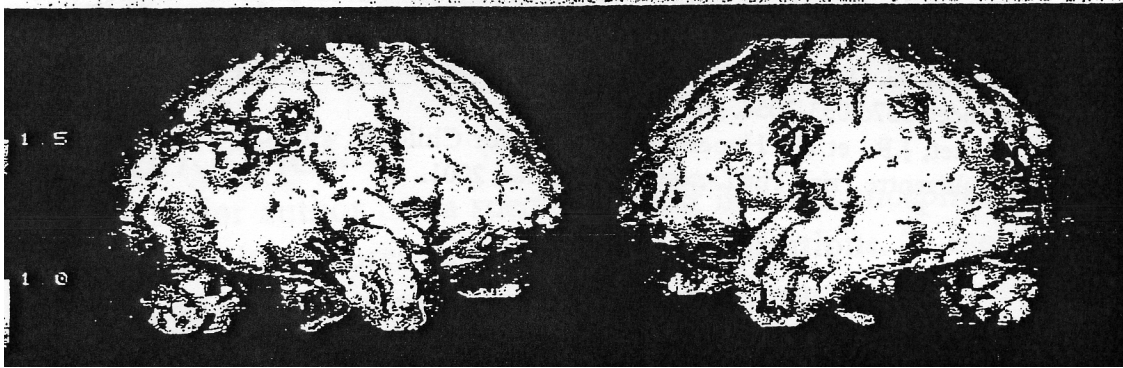
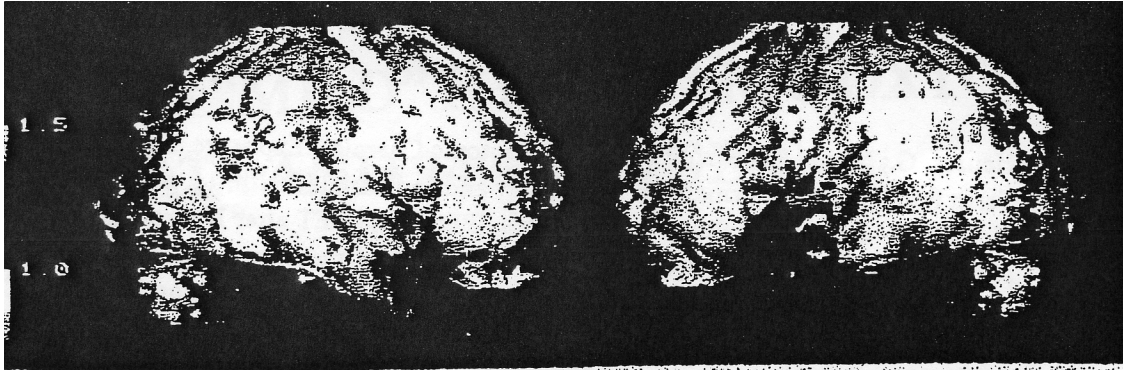
The benefit of ten treatments may only last a few months. After twenty or more treatments the improvement lasts longer (six to eighteen months). However, patients are less likely to be cured than to be improved for an extended period of time after which they often request more HBOT. This is why the eventual purchase of a portable chamber makes sense.

The results of a Canadian study (6) on HBOT of children with cerebral palsy raised the question whether their "control group" was actually a treatment group and therefore also improved. Our treatment protocol with "mild" HBO very much resembles their control group protocol and therefore supports the notion that their control group was indeed a treatment group (5).

While we have become used to improvement in adults, we were struck by the improvement (SPECT) in our children, especially the autistic child (figure 2) who also showed striking improvement in behavior including memory and cognitive functions. He became affectionate, started pointing, verbalized, and now interacted with people around him.

The etiology of autism is still not clear. However, autistic behavior often follows vaccination. Thus, autism may be a subtype of toxic encephalopathy.

Treatment of toxic encephalopathy is difficult. Drugs are often not tolerated and in any case are usually not very successful. This is why mild HBOT has so much promise, having no significant side effects whatsoever in our setting.



Treatment Protocol

	Sea Level	Mild HBO	Traditional HBO
ATA	1.0	1.3	2.0 – 3.0
PSIG	0	4.7	14.7 – 29.4
FSW	0	11	33 – 66
O ₂ Concentration	21%	24%	100%

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