Title: Metallothionein Promotion Therapy for Autism: Clinical Effectiveness

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Research question:

What is the clinical effectiveness of metallothionein promotion therapy for the treatment of autism?

Methods:

A limited literature search was conducted on key health technology assessment resources, including PubMed, the Cochrane Library (Issue 1, 2008), University of York Centre for Reviews and Dissemination (CRD) databases, ECRI, EuroScan, international HTA agencies, and a focused Internet search. Results include articles published between 2002 and the present, and are limited to English language publications only. Filters were applied to limit the retrieval to systematic reviews, observational studies, and randomized clinical. Internet links are provided, where available.

Results:

HTIS reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews and meta-analyses are presented first. These are followed by economic evaluations, randomized controlled trials, observational studies and evidence-based guidelines.

Two observational studies were identified from the literature search. No health technology assessments, systematic reviews, meta-analyses, or randomized controlled trials were identified that specifically addressed the research question. Four documents of interest are included in the Appendix.
Overall summary of findings:

Metallothionein promotion therapy is based on the premise that most autistic children suffer from mercury and metal toxicity, due to a failure of the metallothionein protein system, which is responsible for regulating the levels of heavy metals in the body. It is felt that removal of these toxic metals is beneficial and can result in a decrease in autistic symptoms.

Metallothionein promotion therapy is a combination of treatments given to detoxify the body. The child is given a combination of vitamins, minerals, glutathione, gut treatments with anti-fungals and probiotics, and heavy metal chelation therapy.

Two small observational studies were identified. Patel and Curtis examined 10 children with both autistic spectrum disorder (ASD) and attention-deficit hyperactivity disorder (ADHD). These children were provided with a multi-dimensional treatment plan that included nutrition, environmental control, chelation, and behavioural therapy, over a three to six month period. All children showed significant improvement in multiple areas, including social interaction, writing, language and behaviour, as well as a significant drop in lead levels. The authors concluded that autistic spectrum disorders and ADHD probably require multidimensional therapies.

Geier and Geier conducted a clinical trial of 11 children with ASD. The children were treated with combined anti-androgen and anti-heavy metal chelation therapy for a median period of four months. They noted a significant improvement in multiple areas, including social interaction, behaviour, and clinical symptoms of hyperandrogenemia, as well as significant increases in urinary heavy metal concentrations. The authors concluded that this combination of therapies could be beneficial to some children with ASD.

Overall, both of these small studies saw an improvement in children with ASD.
References summarized:

Health technology assessments
No literature identified

Systematic reviews and meta-analyses
No literature identified

Randomized controlled trials
No literature identified

Observational studies


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Appendix – Further information:

Systematic reviews and meta-analyses


Observational studies


Additional references
