Neurotoxicity and Toxic Body Burdens: Relationship and Treatment Potentials

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Abstract. Many chemicals have documented neurotoxic health effects. These effects are frequently of long duration, leading to the conclusion that such are essentially irreversible. It should be noted, however, that many chemicals causing neurotoxicity are fat-soluble and liable to bioaccumulate in humans. We propose that the persistence of offending chemicals in the body exacerbates the continuance of neurotoxic effects. Based on this premise, an approach designed to reduce body burdens of fat-soluble compounds should lead to a concomitant reduction in neurotoxic effects. This study describes treatment of patients exhibiting neurotoxic symptoms with the Hubbard method of detoxification. The Hubbard method is designed to reduce body burdens of fat-soluble compounds. Following treatment, there were marked improvements in the self-reported symptom profiles of these patients. Transcutaneous current perception thresholds were measured using the Neurometer device in 48 patients both before and after treatment. Significant improvements in this measure of peripheral neuropathy were observed following detoxification. We conclude that damage heretofore thought permanent may in many cases be partially reversible by the simple expedient of reducing the body burdens of foreign compounds.

Key words: Chemical contamination – Human – Treatment approach

Introduction

Over the past century, man has greatly expanded his ability to produce chemicals designed for specific purposes. Unfortunately, the side effects of these chemicals on living organisms have often been neither fully anticipated nor adequately controlled.

Adverse health effects, including neurotoxicity [1-3] have frequently been recognized only after extensive manufacture has occurred [4]. To complicate matters, mixtures of chemicals are involved. When an adverse health effect is noted it is almost impossible to identify which chemical is the cause. Even when the toxicity of a compound is established, it is generally true that adequate regulation of its manufacture and use is slow to follow.

Exposure to toxic chemicals is inevitable. Consequently, it is vital to develop effective means of treating the effects of exposure. As health effects are often correlated with body burdens of toxic chemicals [2, 5], reducing these body burdens becomes a priority.

We have utilized the Hubbard method of detoxification [6] to treat individuals exposed to toxic chemicals. This method is specifically designed to mobilize and enhance the elimination of foreign compounds stored in fat. In this study we describe the treatment of 48 patients, each exhibiting neurotoxic symptoms, with the Hubbard method.

Materials and Methods

Patients. Patients were referred for treatment due to persistent symptoms following exposure to toxic chemicals. Initial medical evaluations included physical examination, standard chemical panels at a fasting state, and symptomatology. The 48 patients comprising this cohort were also screened with the Neurometer device [7], a transcutaneous nerve stimulator for the quantitative assessment of current perception thresholds (CPT). CPTs were measured at three sites: the trigeminal, median and peroneal nerves. At each site, the CPT value was measured for each of three frequencies – 5 Hz, 250 Hz and 2000 Hz.

Detoxification Treatment. Patients were treated with the Hubbard method of detoxification. This program is designed to mobilize and enhance the elimination of fat-stored xenobiotics. Briefly, the program consists of: (1) Exercise combined with incremental doses of nicotinic acid to promote lipid mobilization and stimulate circulation; (2) Intermittent periods in a low temperature sauna, promoting sebaceous and sweat excretion; (3) Supplementation of vitamins and minerals; (4) Polyunsaturated oils; (5) Sufficient liquids to offset the loss of body fluids through sweating; and (6) An ordered schedule providing adequate sleep.

Patients are on this program up to 5 hours per day, every day, until program completion. Daily aerobic exercise is followed by frequent periods of low-heat (60-80 C) sauna. Body weight is kept constant throughout the program. The program is pursued individually until a stable clinical improvement is achieved, generally from 14 to 28 days [8].

Outcome Evaluation. Following completion of the program, standard laboratory tests plus a Severity Rating second evaluation with the Neurometer were performed. Patients also rated the severity of their symptoms both before and after treatment.

Results and Discussion

Treatment with the Hubbard method of detoxification did lead to both a marked reduction in self-reported symptom severity (Figure 1) and an improvement in current perception

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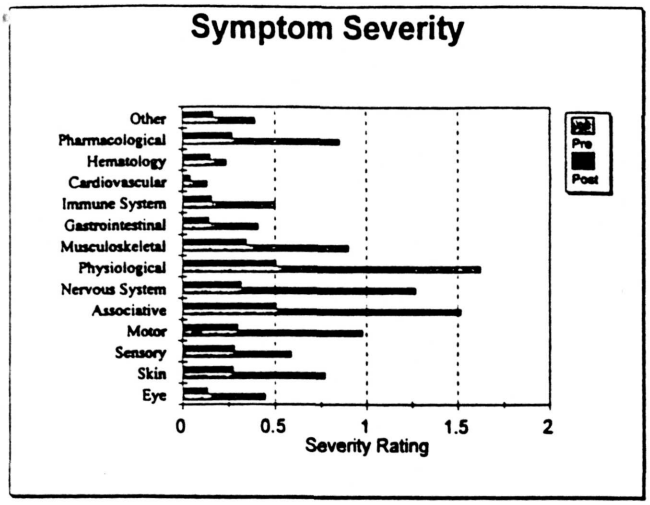

Figure 1. Patient rated severity of symptoms: patients rated 87 symptoms in 14 categories, both before and after treatment, on a scale of 0 (none) to 5 (severe). Marked improvements were noted.

thresholds (Figure 2). Improvements in CPTs were noted in all nine tests and were statistically significant ($P<0.05$) in three of the nine.

In prior work, the Hubbard method was used to treat a group of firefighters following exposure to PCBs. 5 of 17 had abnormal CPTs. All 5 improved following detoxification [8]. In an independent examination, significant improvements were noted for several psychometric measures as well [9].

We conclude that reduction of chemical body burdens is a logical approach to address health effects consequent to chemical exposure.

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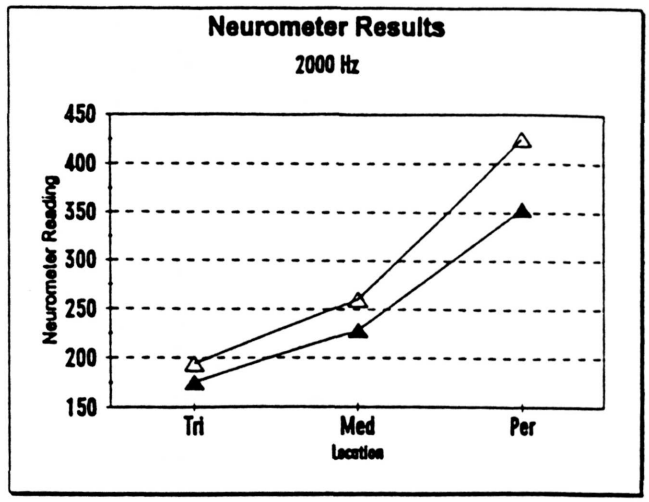

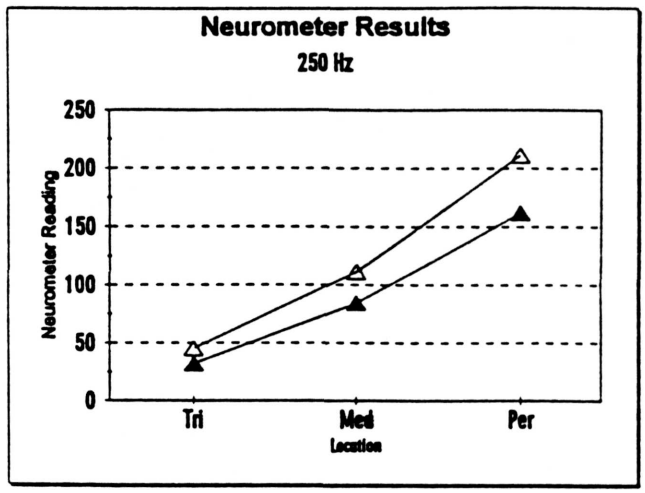

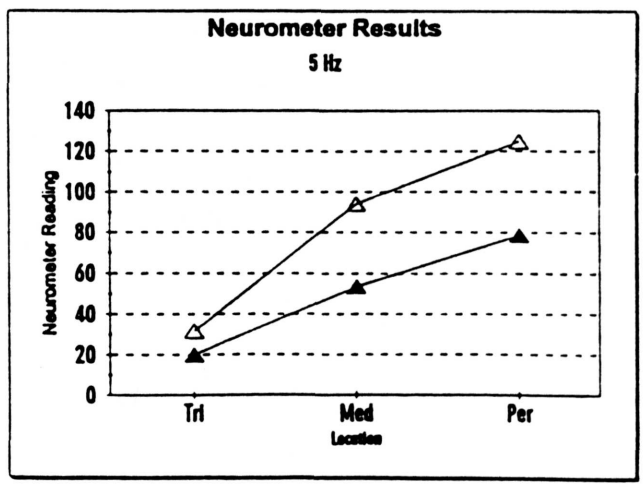

Figure 2. Current Perception thresholds: CPTs before (open triangle) and after (closed triangle) treatment with the Hubbard method. Changes in the trigeminal nerve at 250 Hz and 5 Hz and the peroneal nerve at 2000 Hz are statistically significant ($P<0.05$).