FASE
SCIENCE REPORT

The Use of Niacin in the Hubbard Detoxification Program

Background

Over the last three decades, the detoxification program developed by L. Ron Hubbard has been employed to help thousands of individuals find relief from symptoms associated with occupational and environmental chemical exposures. It has also been widely used as a component of drug rehabilitation.

The Hubbard regimen, which is followed on a daily basis for a period averaging 3-4 weeks, combines 20 to 30 minutes of aerobic exercise, two to four hours of sweating in a low-heat sauna (punctuated by regular breaks for cool-down and fluid replacement), electrolytes, polyunsaturated oils and gradually increasing doses of niacin, multivitamins and minerals to support the process itself and for biochemical repair[1]. It is designed to gradually increase the rates at which the body can both mobilize and excrete accumulated chemical and drug contaminants.

First developed in 1978, this approach to the problem of chemical body burden remains unique. Its aim to address the lingering effects from abuse of prescription and street drugs, as well as those from environmental chemicals, mirrors a view that has emerged in recent years among environmental health specialists: the possibility that addictive drugs and environmental pollutants initiate an identical disease process[2].

Program Safety

Published reports and clinical experience in thousands of cases have established the safety of the Hubbard regimen. Nearly three decades ago, one study[3] examined the health status of one hundred and three individuals who volunteered for additional testing concomitant with the detoxification program. Minor temporary complications were noted in less than 3 percent of participants.

A later safety study reviewed the medical status of 24 individuals who had completed detoxification to address exposures sustained during the Chernobyl disaster[4]. "There is evidence suggesting that the program revitalizes the immune system and improves the general physical condition of the participant," the researchers concluded. "In spite of its robust regimen, there is an absence of negative health effects." A summary of observations from the director of an occupational medicine clinic echoed this, noting that no serious side effects had been seen in 3,500 cases that completed the Hubbard program[5].

The most comprehensive long-term review to date involved a ten-year follow up with a group of 36 individuals who completed the Hubbard program in the former Soviet Union during the 1990s[6]. A wide range of physical and psychological responses and complete laboratory panels were monitored; in all, around 370 parameters per patient were quantitatively evaluated. The health status of these individuals was compared to that of two matched groups that did not undergo detoxification, with the same parameters measured for control

group members (matched in age, gender, and location of residence).

Detoxification was found to have markedly improved the general physical and psychological conditions of the participants. There was an absence of negative health effects and, in fact, those who had completed the program were found to have better liver function than those who did not – a finding with significance in regard to the use of niacin in the program.

The Role of Niacin

The elements of the Hubbard program operate in concert, with the aim of triggering the gradual release of chemical by-products that have accumulated in fat and other tissues, promoting elimination, particularly through the skin, by inducing heavy sweating.

Research regarding the role that niacin plays in this process is incomplete. It may correct localized tissue deficiencies of niacin; it does cause a dramatic increase in free fatty acid (FFA) release from adipose tissue for over 24 hours [7-9]. Release of free fatty acids has been shown to be accompanied by a release of fat-stored toxins in animal studies[10,11] as well as in human studies of serum PCBs after weight loss[12]. The vasodilation resulting from niacin intake[13,14] (experienced as a "flush") may increase movement of chemical residues from deeper circulation through the dermal tissues for redistribution into sebum and/or into sweat glands. This normally relatively minor excretory route is enhanced by increased sweating during the exercise and sauna portions of the daily regimen.

Researchers have highlighted additional benefits from niacin intake that may have relevance to the improvements seen among program completions, from reducing vascular inflammation[15] to maintaining enzymes necessary for biotransformation and elimination of xenobiotics (chemicals foreign to the body)[16-18] but a detailed discussion of these findings is beyond the scope of this paper.

Considerations Regarding Niacin Use

The form of niacin that is used in the Hubbard program is crystalline niacin, also known as "immediate release" (IR) niacin. High doses of crystalline niacin have been used effectively as a therapy to prevent heart disease for more than 50 years[19-21].

"Overall, the perception of niacin side effects is often greater than the reality," observes a recent review of safety considerations regarding the nutrient. Rare side effects, which resolve when niacin use ceases, can include reversible blurred vision, nausea and vomiting, and the exacerbation of peptic ulcers. Clinically unimportant and small (<10%) laboratory abnormalities can include slower blood clotting, increased uric acid, and decreases in platelet count and serum phosphorus[22].

The "niacin flush" is the most bothersome side effect associated with this supplement. However, "with its transient and non-pathological effects, the flushing reaction in response to supplemental nicotinic acid deserves to be characterized as a nuisance, but not as a hazard"[23]. The Coronary Drug Project tested safety and effectiveness of treatment with 1-3g/day for high cholesterol and coronary outcome. At a 15-year follow-up, mortality was reduced in the treated group[24].

In an effort to eliminate the "flush" response, "sustained release" (SR) forms of niacin were developed in the 1960s with, as one researcher characterizes it, "problematic results"[25]. The primary concern with SR niacin has been a potential for chemically-driven liver damage (hepatotoxicity)[26].

When the term "niacin" is evoked in the context of detoxification, the distinction between the two forms is critical to addressing questions regarding program safety. As numerous studies have revealed, the health effects associated with the two forms are quite different.

These differences were demonstrated in a clinical trial comparing the effects of administering increasing levels of both crystalline (IR) and slow release niacin[27]. The trial involved 46 adults. Half were given IR niacin, and half SR niacin. After an initial treatment period, doses were sequentially

increased and participants received 1000, 1500, 2000 and 3000 mg/d of niacin, maintaining each dosage level for 6 weeks. None of the patients taking IR niacin developed hepatoxic effects, while 12 (52%) of the 23 patients taking SR niacin did. Citing these findings, as well as case reports of adverse liver effects associated with the use of SR niacin[28-42] the researchers recommended that its use be restricted.

A reason has been discovered for the difference in effect from administration of the two forms of niacin[43], in essence that the differing absorption rates of the two different forms result in their entering different metabolic pathways[26,44]. (A 1-g dose of IR niacin would be absorbed and metabolized within 2 hours, while absorption of a 1-g dose of SR niacin would take >20 hours[45].)

On one pathway, metabolizing of the IR form produces molecules that cause the "flushing" reaction. When niacin is absorbed slowly, as with SR formulations, a second pathway produces metabolites associated with hepatotoxicity[46,47]. This phenomenon is reflected in case histories of individuals who developed liver abnormalities while taking SR niacin, and whose liver tests returned to normal after switching to IR niacin[30].

The issue of absorption has some relevance in considering the dosages of IR niacin used in the Hubbard program. These progress in stages, in balance with other nutrients, beginning at 100 mg/day and potentially reaching as much as 5 g/day[1]. It is important to note that many participants do not reach the highest dosages. Program completion is generally accomplished in 30 days or less; consequently, the time spent at any given dose would be a matter of days.

While these dosages are above those recommended for dietary supplementation, they are consistent with those seen in therapeutic administration of niacin for management of elevated blood lipids. The monograph for Niacor (an FDA approved commercial niacin product) notes that the maximum adult dosage is 6 g per day. Doses of IR niacin as high as 6 g have been maintained for as long as 6 months with minimal effect and no impact on liver function[30]. Participants in the IR/SR comparison study mentioned above[28] received 3 g per day for six weeks with no hepatotoxic effects observed. Adverse effects associated with IR niacin intake are likewise absent in clinical delivery of detoxification to thousands of cases[5].

In 1998, the FDA approved an "extended release" (ER) form of niacin, with the trademark Niaspan. The ER form was developed in an effort to avoid both the flushing response to IR niacin and the heptatotoxicity associated with SR forms[42].

It is worth noting that drug users who inject drugs are at increased risk for Hepatitis C. In these cases, or where there is a history of liver disease, a physician must determine whether the individual is a candidate for the detoxification program. A recent literature review suggests that IR niacin can be used safely in some patients with chronic liver disease with appropriate monitoring[47].

Summary

Over decades of application, involving more than 10,000 individuals with a wide range of occupational and environmental exposures or drug history, the Hubbard program has been demonstrated to be a safe, non-invasive intervention that can effectively address symptoms associated with both chemical injury and drug abuse. The scientific literature regarding therapeutic use of niacin, as well as clinical experience, offer little to suggest that the short-term use of this nutrient in the regimen presents significant or unacceptable risk to participants. Given the shortage of therapies for addressing chemical body burden and its impact, this regimen is most correctly viewed as a welcome addition to the tools available to healthcare providers.

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5 Communication from David E. Root, MD, MPH, FACOEM, who was medical director of the clinic and oversaw each of the 3,500 cases on which these observations are based. Prior to entering private practice, Dr. Root was a career officer in the Air Force, serving as a flight surgeon and retiring as a Colonel. He has participated as a co-investigator in several studies relating to the program, including projects in the former Yugoslavia, Russia and Kazakhstan.
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