

The Effects of Specific Upper Cervical Adjustments on the CD4 Counts of HIV Positive Patients

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Abstract

The researchers of this project sought to demonstrate that upper cervical specific adjustments would have a profound effect on the physiology, serology and immunology of HIV positive individuals.

The effect of specific upper cervical adjustments on the immune system CD4 cell counts of HIV positive individuals was measured by CD4/mm³ in the blood. These tests were performed by the patients independent medical center where they were under medical supervision for the condition. The measured CD4 counts in the regular group were dramatically increased over the counts of the control group. A 48% increase in CD4 cells was demonstrated over the six month duration of the study for the adjusted group.

Introduction

The concept of the subluxation has been the cornerstone of the theory and practice of chiropractic since its founding in 1895 by D.D. Palmer. It is one of the most controversial concerns in health care today, and it finds supporters and critics both within and outside the chiropractic profession (1). Today it is estimated that 20 million patients receive chiropractic care annually at an estimated cost of 2 billion dollars (2). As a profession, chiropractic has only begun to scratch the surface of the endless possibilities that stand before it in the realm of the subluxation and the effects on the nervous system.

Over the past 20-30 years several excellent attempts have been made within the profession to correlate the effects of adjustments on the likes of substance P, cortisol and lymphocytes (3). Since 1984, the growing number of immuno-compromised people who have contracted HIV has left researchers worldwide scrambling for answers. It is estimated that this year the HIV population in the U.S. will reach 2.5 million (4). This pilot study attempts to explain chiropractic's potential role in the care of these patients and the potential role of adjustments and their effect on the nervous system and relationship between the nervous system and immunity.

Background

Since the beginning of the HIV epidemic, the infection has slowly become a chronic illness. Initially, patients were diagnosed with acute medical conditions requiring intensive medical therapy, and more chronic indolent problems were rarely addressed. Now with the improvement of early diagnosis and prophylactic therapies, patients are living longer. These circumstances have created an arena where wellness and quality of life issues are increasingly pertinent.

The search for and ultimately the detection of HIV, back in 1984 was promoted when researchers suspected that the consistent findings of opportunistic infections among hundreds of immuno-compromised patients could be related back to a single etiology. The virus itself is not detected in the blood of an infected patient, but rather the antigens to the virus are detected. The first standard test is the Elisa which can prove to result in a false positive should the patient have a bad cold, flu, or a hypersensitivity response as in allergies. The back-up test is the Western Blot test which must pick up three different antigens in the blood, all present at the same time, to register a true positive. Only the presence of the HIV will render this outcome.

The efficacy of chiropractic care in the field of somato-visceral disease processes has been demonstrated by several practitioners over the pasts two decades (5-8). Chiropractic, as it pertains to immunology, received a boost in 1991, when Patricia Brennan, Ph.D., et.al. conducted a study that ultimately demonstrated that when adjusting the thoracic spine the phagocytic respiratory burst of polymorphnuclear neutrophils (PMN) and monocytes from adjusted adults were enhanced (6). There have been numerous medical studies demonstrating the direct nerve innervation to the immune system (9-17)

Materials and Methods Experimental Design

A randomized, controlled clinical trial utilizing the Grostic method of analysis and adjusting the upper cervical spine was used (18-19). Twenty-two patients were selected from the public to begin the study which took a duration of six months. The mean age was 28 years. Two patients expired during the study from complications of the disease. From the remaining 20 patients, five moved away or ceased care without notice. Five other patients did not submit significant blood work to warrant their inclusion in the final statistical analysis. The remaining ten (n=10) patients provided the significant data for our statistical workup. Three sets of blood work per patient for the ten patients was collected to assess the growth or decline of CD4 cells for each. Of the ten total patients, half were in the regular adjusted group (n=5) and half were in the control group (n=5).

The regular adjustment was performed with the Laney KH-4 instrument with a transverse process contact on atlas. The vectors from the X-ray analysis were used with the patient on a Grostic adjusting table in the side posture position. For the control group, an inactive Laney KH-4 instrument was placed on the patients mastoid bone and the trigger was depressed with the patient in the supine position. No force was emitted from the stylus to the control patients. Post adjustment x-rays were taken to determine if the laterality and rotational components of the subluxation were reduced. Patients were asked to complete the Rand Corporation SF36 quality of life questionnaire to establish a baseline (20) and then weekly for the remainder of the study.

Patients History

Each patient was required to have a physical exam performed prior to the first adjustment. This exam included visceral, orthopedic, chiropractic, range of motion and historical findings. Eight of the ten patients were currently taking medication for the disease. Two of the ten were not under any medical care at all. Each of the patients on medication were taking AZT which is the drug of choice to combat the rapid decline of CD4 cells by influencing the reverse transcriptase in the T4 cells.

Patient findings for opportunistic infections included thrush, kaposi's sarcoma (KS), pneumocystis carinii pneumonia, back pain, neck pain, and enlarged lymph nodes.

Results

The control group experienced a 7.96% decrease and the adjusted group experienced a 48% increase in CD4 cell levels ($P=0.06$). Both groups were monitored with the Rand Corp. SF-36 to determine quality of life as rated subjectively. Both groups demonstrated subjective improvement with the control group exhibiting a slope of 1.62 and the adjusted group having a slope of 1.74.

Discussion

The Dentate Ligament Hypothesis proposed by Dr. John D. Grostic serves as the basis for this study. This hypothesis states that misalignment of the upper cervical vertebrae, because of their unique attachment to the spinal cord by means of the dentate ligaments, can directly stress and deform the spinal cord (21). Subsequently, this stress on the cord, in addition to direct mechanical irritation, may produce venous occlusion with stasis of blood and resulting anoxia in particular areas of the upper cervical cord. In fact, dentate ligament distortion has proven to have far reaching effects on the nervous system. High cervical cord lesions were found to have a profound degenerative effect on the nervous system (22). The dentate distortion was found to be related, in 1967, to kinking of the medulla in children (23).

C1 subluxation may also result in torsioning the spinal cerebellar tract. This sets up a system of high gate facilitation which results in sustained sympatheticonia(5). The spinocerebellar tracts are composed of the largest axons in the spinal cord (type A fibers). They are located at the site of maximal mechanical irritation. If traction disrupts cord function it does so first in the spinocerebellar tracts, tracts responsible for muscle tone and joint position sense. Long term hyperactivity of particular sympathetic pathways is deleterious to the target tissues and may indeed have a rather general significance (5). This over stimulation of the proprioceptors at the C1-C2 and C1-occiput articulations will set up the sustained sympatheticonia through high gate facilitation. The diversity of responses in stimulating various peripheral sympathetic pathways is not through the influences of the sympathetic neurons, but in the respondent actions of the innervated tissues and organs. These actions are as varied as the tissues and organs they innervate. Sympathetic stimulation introduces no new qualities, but modifies (increases or decreases, accelerates or retards, stimulates or inhibits) the inherent functional properties of the target tissues, each, therefore, responding in its own manner (5). It should not be surprising, in view of these diverse organ and tissue responses, that sympathetic hyperactivity, sustained over long periods of time, will tend to produce pathologic changes in the target tissues.

This process of high gate facilitation will logically lower thresholds and increase neuronal firing. This would at first seem to contraindicate the idea that subluxation leads to a depression of CD4 cell production. The increased neuronal firing would imply that the target immunological tissues would increase their production under the influence of the sympathetic system. However, chronic subluxations and long term sympatheticonia will eventually lead to an attenuation in the neuronal physiology and "burnout," which leads to a reduced state of cellular activity. We believe this sets up the depressed state in

which the number of CD4 cells stimulated into production is less than previously required to maintain proper health.

One of the most important role of the sympathetic nervous system (SNS), not always emphasized or recognized in textbooks, is part of it's "ergothrophic function," (24) which is the adjusting of circulatory, metabolic and visceral activity according to postural and musculoskeletal demands, It is here that we find an important link between the musculoskeletal system and the SNS. Hess impresses upon us the importance of the diencephalon when, through neural probing, he demonstrated a connection never before observed by modern researchers. When probing the diencephalon in anesthetized cats, he observed the correlation between visceral acts and their postural counterparts. While probing the posterior part of the diencephalon, one cat begins to wrretch as in vomiting and assumes the proper biomechanical posture to assist in the act; hunching of the back and elevating of the hind quarters. The examples are vivid and give us, as chiropractors, a much needed boost in our search for scientific explanations for the effects of subluxations.

We must go the final step in determining how the CD4 cells are potentially decreased. With decreased SNS function already established, we find that the SNS and immunologic tissues work on a system of stimulating adrenergic receptors. We find cholinergic receptors are present on thymosic producing thymic epithelial cells and beta adrenergic receptors are identified on lymphocytes (25).

Conclusion

Though the study size was small, preliminary results suggest that chiropractic adjustments of the upper cervical spine may increase the CD4 levels in HIV positive individuals. These results suggest that follow-up studies of the link between the nervous system, immunity and the upper cervical region are well warranted.

Although these results are very encouraging, it must be noted that we cannot generalize our findings to the general population. We are currently working on a larger study to include approximately 200 individuals with HIV. This larger study will hopefully, substantiate these findings.

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