Dynamic Chiropractic

CHIROPRACTIC (GENERAL)

A Blood Drive for Chiropractic

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The indomitable and eminently quotable Teddy Roosevelt once declared, "A man who is good enough to shed his blood for the country is good enough to be given a square deal afterwards." Without too much wordsmithing, I could easily substitute "clinician" for "country" and "diagnosis" for "deal" and wind up with: "A man who is good enough to shed his blood for the clinician is good enough to be given a square diagnosis afterwards" or "A physician who is good enough to draw blood from the patient is good enough to give a square deal afterwards."

This is my plea for enabling clinicians - particularly doctors of chiropractic - to perform more intensive and intelligent bloodwork in their diagnostic examinations. Almost two decades ago, when I first considered getting into chiropractic research, already having had extensive experience directing clinical chemistry programs at a Harvard teaching hospital and then at an affiliate of the Mayo Clinic, I was deeply impressed by the curricula in laboratory diagnosis offered by such chiropractic institutions as National and Northwestern. My feeling was that with this exposure, the chiropractic profession was being given the tools to arrive at early and significant diagnoses in their patient examinations - particularly since I had seen poor preparation in this area for hospital staff and actually had designed my own course in clinical chemistry to try to rectify this situation. The reality, unfortunately, is that state regulations involving blood drawing often act as one of several disincentives for chiropractors to put such a powerful diagnostic tool into everyday practice.

The fact remains, however, that if the term *subluxation* is to be viewed from a progressive, 21st

century perspective (as I have suggested in this space previously),[5] it is pertinent to consider a variety of early warning signs throughout the body beyond fixations within the spine. These would include abnormal levels of an assortment of analytes within the blood serum that may very well occur subclinically, but that would still qualify as early indications for prompt intervention. The table below is but the smallest sampling of clinical problems that are disclosed with what have become routine determinations in blood serum alone, often automated.

Other analytes that may impress some as being a bit removed from the beaten track, but which are still easily assayed, include aldosterone and homocysteine. Elevated levels of aldosterone may be of significance in that they are associated not only with elevated blood pressure,[6] but also vascular inflammation leading to congestive heart failure.[7] The situation with homocysteine is far more complex, since elevated levels have been linked to vascular disease,[8] cervical artery dissection,[9] stroke,[10] bone resorption,[11] leukoariosis (white matter disease),12 brain natruietic peptide (associated with chronic heart failure),[13-14] and hearing loss.[15] Finally, interleukin-6 acts as a pro-inflammatory cytokine which is secreted by T-cells and macrophages to stimulate immune responses to trauma. It runs into trouble in that it functions as a key intermediate in the formation and rupture of atherosclerotic deposits along the arterial wall,[16-17] eventually leading to cardiovascular events such as myocardial infarctions.

It turns out that there is more than just a casual connection of blood chemistry to chiropractic. Besides just making good sense to inform the patient, knowing about the levels of such analytes as these has resulted in several lines of research that speak loudly to the potential value of spinal manipulation beyond the musculoskeletal system:

- Spinal manipulation appears, at least in the short term, to decrease levels of interleukin-618-19 and C-reactive protein,[19] in addition to the inflammatory intermediate tumor necrosis factor,[18-20] the latter being linked to the initiation of pain in the L5 vertebral region.[21]
- Spinal manipulation with cavitations may also be associated with the suppression of the pro-inflammatory cytokine interleukin-2 under certain conditions.[22]
- Spinal manipulation with cavitations has been linked to increased levels of the anti-inflammatory cytokine interleukin-10 in asymptomatic subjects.[23]
- A pilot clinical trial has suggested that spinal manipulation is capable of reducing levels of serum aldosterone.[24]
- Anti-oxidative activity (which would suppress inflammation and aging) through the stimulation of catalase activity has been shown to be a consequence of spinal manipulation.[25]
- In just a single case study, the administration of spinal manipulation has led to the reduction of glycosylated hemoglobin. This is suggested to be an indication that the effects of diabetes in this particular patient may have been reversed.

What these preliminary data tell us is that there are systemic indicators of metabolic imbalances that are measurable through the assay of blood serum components which cannot be ignored. Several lines of evidence also point to the conclusion that spinal manipulation may lead, at least in the short term, to the suppression of inflammatory intermediates, many of which lead to coronary heart disease[26] and the vascular effects which so often and often so erroneously have often been said to be the consequence of cervical manipulation.[27-28]

Serum blood determinations have much to do with the future of both the practice and research of chiropractic, and as such should be strongly encouraged. The conceptual limitation of spinal

manipulation to vertebral fixations without this broader view is, in my opinion, an impediment to the potentials of chiropractic as an integrated approach to health care.

BLOOD SERUM ANALYTE[1]	CLINICAL SIGNIFICANCE
Enzymes [elevations]:	
Acid phosphatase	Carcinoma of prostate
Alanine aminotransferase	Hepatic parenchymal disease
Aldolase	Muscle disease
Alkaline phosphatase	Bone and hepatobiliary diseases
Amylase	Pancreatic diseases
Aspartate aminotransferase	Myocardial infarction, hepatic parenchymal Diseases, muscle disease
Creatine kinase	Myocardial infarction, muscle diseases
Glutamate dehydrogenase	Hepatic parenchymal disease
N-glutamyl transferase	Hepatobiliary disease, alcoholism
Lactate dehydrogenase	Hepatic parenchymal disease
Trypsin(ogen)	Pancreatic diseases
Proteins:	
IgG elevation	Autoimmune response
IgA elevation	Skin, gut, respiratory, renal infections
IgM elevation	Primary viral infections, blood serum infection
Monoclonal Ig's (paraproteins)	Neoplasms
Alpha-antitrypsin defi ciency	Congenital defi ciency, neonatal respiratory distress syndrome
Troponin[2]	Myocardial infarction
C-reactive protein (CRP)[3] elevation	Myocardial infarction risk factor
Interleukin-6 elevation[4]	Atherosclerosis intermediate, CRP precursor
Carbohydrates [elevations]:	
Glucose	Diabetes mellitus
Glycosylated hemoglobin	Diabetes mellitus

Electrolytes:	
Sodium defi ciency	Excessive sweating, prolonged vomiting,
Sodium elevation	severe polyruria, metabolic acidosis
Potassium defi ciency	Hyperaldosteronism, hyperadrenocorticism
Potassium excess	(Cushing's syndrome)
Chloride defi ciency	Alkalosis, primary or secondary
Chloride excess	aldosteronism,
Total carbon dioxide defi ciency	postoperative
Total carbon dioxide elevation	therapy with potassium-poor Acute or end-stage renal failure Salt-losing nephritis, certain metabolic acidoses, prolonged vomiting Dehydration, renal tubular acidosis, acute renal Renal failure, respiratory alkalosis Metabolic alkalosis, respiratory acidosis

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