Osteopathic Issues Raised by the September 2010 JAOA

To the Editor,

I almost didn’t read the September 2010 issue of *JAOA*—The *Journal of the American Osteopathic Association* because the table of contents suggested little in the way of osteopathic principles and practice, my main professional interest. However, I got trapped into reading the letters to the editor—especially those by Todd R. Fredricks, DO;¹ and Zachary Comeaux, DO.² These letters had been written in regard to an earlier letter by Eric E. Shore, DO, JD, MBA,³ who also wrote a response⁴ to the letters by Drs Fredricks¹ and Comeaux.²

We do not seem capable of resolving this ongoing controversy over the identity of the osteopathic medical profession versus the allopathic medical profession. This controversy has been wasting our energies since I entered the osteopathic medical profession in 1952 as a student, and we are no further ahead now than we were then in settling the matter. What would it take to agree to a moratorium on this debate?

My attention having been captured by these letters, I moved on to the main articles in the *JAOA* that I was interested in. The original contribution on combat-related posttraumatic headache by CPT Matthew P. Kozminski, DO, MC, USA,⁵ struck a familiar note.

I was an active-duty Marine during the Korean War, an active Marine Reservist for the next 14 years, and a Reserve Navy medical officer serving Marine Reservists for 19 years after that. While serving in these capacities, I saw, diagnosed, and treated many patients who had head and cervicothoracic distress. Although I identified several causes for the headaches, the most common etiologic factor by far was the wearing of military equipment, especially the World War II–type steel helmet. The cervicothoracic problems of many of my patients were also associated with the prolonged carrying of backpacks.

I know that the protective equipment for military personnel has since been improved, both in terms of individual protection and “wearability.” However, I have learned recently from television news reports that it is common for soldiers in combat areas to carry a total weight of up to 80 pounds (36 kg) for extended missions of 8 hours or more. Wearing such heavy loads for such a long time, along with causing the obvious excessive fatigue, is clearly likely to induce sufficient stress in the cervical and upper thoracic areas to give rise to headache. Although our military personnel may not be able to avoid this trauma, osteopathic physicians should recognize the trauma as an important contributory factor to headache among these individuals and give it some priority in our diagnosis and treatment.

Osteopathic physicians view occupational and “overuse” stresses and other recurrent stresses as important etiologic factors in a variety of musculoskeletal complaints of patients. The increased incidence of carpal tunnel syndrome since the widespread use of com-
puter's as I have observed in my professional experience, has reinforced this clinical concept.

Without considering behavioral contributors to musculoskeletal problems, how can an osteopathic physician treat “the whole patient”? Headache, even of a posttraumatic nature, is a symptom—the causes of which are often multiple, including a long history of contributory causes.

I hope that the debate over the “osteopathic difference,” both in title and in practice, can be put aside in favor of directing our energies toward informing the public of the special and distinct forms of healthcare that osteopathic physicians offer.

David A. Patriquin, DO, FAAO
West Dummerston, Vermont

References

Response

As a former student of Dr Patriquin, I am happy to concur with his suggestion that we place a moratorium on the debate over our titles. However, I would add that it is not the “traditional” DOs (doctors of osteopathy) who keep bringing up this matter. Those of us who like our DO credentials, who have enjoyed professional success with our credentials, and who relish the pride that comes from having a unique degree, understand why preservation of those DO initials is important.

As a US Army colonel with 2 (soon to be 3) tours of duty in Iraq, I am qualified to address Dr Patriquin’s comments regarding contemporary body armor. I ran an ad hoc osteopathic manipulative medicine clinic in north-central Iraq during my most recent tour in 2008. My personal body armor weighed 62 pounds (28 kg) when fully rigged, and my helmet contributed another 4 pounds (1.8 kg) to the total. It is fatiguing and a contributor to somatic dysfunction to wear this gear, but the tradeoff is the confidence you have in surviving almost any insult short of a close-range, high-yieldconcussive blast or a direct hit from a mortar or other weapon system larger than 7.62 mm.

When one considers the fact that the United States lost more troops in the invasion of Normandy in June 1944 than in the combined Operation Iraqi Freedom/Operation Enduring Freedom, launched in 2001, one realizes that what modern materials engineering has accomplished to protect the US soldier is nothing short of a miracle. Add to this equipment progress the advanced and aggressive hemostatic technology used in the US military, and US troops have a survival rate of approximately 90% with almost any injury sustained in current operations.

Thus, the heavy body armor contributes to somatic dysfunction but protects the wearer against penetrating trauma with rapid exsanguination. For my part, and with all due respect to the courage of my fellow, Korean War-era veterans, I believe that this is a reasonable tradeoff—especially when we can field DOs forward to address the somatic dysfunctions with osteopathic manipulative treatment. Unfortunately, troops in the Korean War did not enjoy such self-protection tools, as reflected by the lethality of gunshot wounds in that conflict.

COL Todd R. Fredricks, DO, MC, FS, USA
Amesville, Ohio

References

Response

I would like to thank THE JOURNAL for the opportunity to respond to Dr Patriquin’s correspondence. Dr Patriquin correctly states that the debate over our professional “identity” has been raging for decades. Perhaps the reason for this ongoing debate is related to the scientific and technological advances in medicine. The osteopathic medical profession has incorporated these advances and moved into a position of being nearly identical to its allopathic sibling, while allopathic physicians have recognized the benefits of an holistic approach and moved closer to our osteopathic “philosophy.” Thus, a de facto merger between the osteopathic and allopathic medical professions has effectively been accomplished.

There are few, if any, purely DO or MD hospitals left, and few medical schools are without a mixed DO/MD faculty. Osteopathic and allopathic residents train side by side in hospitals, they frequently take the same examinations, and they commonly join each other on the same hospital staffs. In point of fact, the only difference left between these 2 branches of the medical profession is the degree designation.

Much of Dr Patriquin’s letter provides an example of this perspective. While noting that he served honorably as a military physician, Dr Patriquin presents his observations and conclusions on a problem that is neither “osteopathic” nor “allopathic,” but simply
“medical.” Perhaps, because Dr Patriquin states that his “main professional interest” is “osteopathic principles and practice” (OPP), he also brings an OPP perspective to the problem he discusses. However, wouldn’t it benefit more servicemen and servicewomen—and more patients in general—if such an OPP approach was disseminated throughout the entire medical profession?

The debate over a possible degree change for the purpose of enhancing public recognition of osteopathic physicians—a battle that requires continued fighting after more than a century—will rage on, because the DO-MD merger has effectively already been accomplished. Time, science, technology, and economics have already made the decision to unite the 2 medical siblings in a de facto manner. All that remains is for the osteopathic medical profession to formally recognize this union with the granting of both degrees at graduation (ie, an “MD, DO” degree). Then we would be free to spend our valuable time fighting for our patients and our united profession, rather than for public recognition of our status as physicians.

Such formal recognition would finally put this issue to rest and allow us to not only continue to provide the best care possible for our patients, but also to bring the benefits of manipulative medicine to all patients—not just those who have DOs as their physicians. After all, isn’t that the real goal?

Eric E. Shore, DO, JD, MBA
Philadelphia, Pennsylvania

Importance of Neuroplasticity Changes in Mood Disorder

To the Editor:
The study and management of mental illness is a high priority in public health. The World Health Organization (WHO) opines the following:1-2:

...there is wide acknowledgement of an increase in mental ill-health at a global level. The authoritative work undertaken by WHO and the World Bank indicates that by the year 2020 depression will constitute the second largest cause of disease burden worldwide (Murray & Lopez, 1996) [expressed in terms of disability-adjusted life-years]. Positive mental health is a set of key domains encompassing well-being and positive states of mind. It is an integral part of health, including positive physical health. It can co-occur with and influence the onset, nature and outcomes of physical and mental illnesses.

Researchers studying mood disorder have struggled to find a reproducible biologic marker with specificity and sensitivity. Several decades ago, the treatment of patients who had Mycobacterium tuberculosis infection with isoniazid phosphate, a monoamine oxidase inhibitor (MAOI), provided an observation that many patients, even the most regressed, improved.3 According to a 1957 article about this drug in The New York Times,4 “Following therapy, which began in 1951, it was noted that tuberculosis patients experienced improved good spirits and appetite and gained weight. In one case, the drug apparently led to their ‘dancing in the wards’ at Sea View Hospital on Staten Island.”

The recognition of the effectiveness of MAOIs empirically created the basis of the biogenic amine theory of depression.4 A biogenic amine is a biogenic substance with an amine group. Within the group of biogenic amines, there are catecholamines known as dopamine, norepinephrine, and epinephrine, in addition to histamine and the indolamine serotonin.

Substantial imaging and histologic evidence places neuroplasticity at the center of mood disorder pathologic mechanisms.5-8 Tianeptine offers an entry into the study of neuroplasticity for advancements in the definition and treatment of the heterogeneous group of mood disorder illnesses.

Tianeptine is an established, effective, and rapid-acting antidepressant approved in many countries.9-27 However, tianeptine is not available in the United States. Tianeptine has no affinity for neurotransmitter receptors, and its use does not involve a central nervous system effect to inhibit uptake of serotonin or norepinephrine.28 Nor does tianeptine inhibit monoamine oxidase A or monoamine oxidase B in the central nervous system.29 Tianeptine enhances the reuptake of 5-hydroxytryptamine (ie, serotonin) and reduces the number of transporter sites and messenger ribonucleic acid (mRNA) levels in the dorsal raphe nucleus.28

A large body of evidence from positron emission tomography, single photon emission computed tomography, and magnetic resonance imaging studies demonstrates changes in brain function and volume—as measured by blood flow, metabolism, and structure—in patients with mood disorder.5 Areas of brain pathology have included the medial prefrontal cortex, the medial and caudalateral orbitalfrontal cortex, the amygdala, the hippocampus, the ventromedial parts of basal ganglia, and the anterior cingulate.5

In 1999, Rajkowska et al published one of the first histologic studies in human beings showing morphometric evidence of neuronal and glial cell changes in the histopathologic mechanisms of major depressive disorder (MDD). The authors indicated that they were encouraged to conduct this study by functional abnormalities consistently found in imaging of the left dorsolateral prefrontal cortex and left orbitofrontal cortex. In the study,12 12 patients with a retrospective diagnosis of MDD without psychosis were compared to 12 normal controls. The study demonstrated diminished neuronal size and cortical thickness (most prominently in the rostral orbitofrontal region), marked diminished glial density, and moderately diminished neuronal size without significant loss of cortical thickness in the left caudal orbitofrontal region and dorsolateral prefrontal cortical region.6

McEwen7 demonstrated that the hippocampus undergoes stress-related volume loss. Within the hippocampal
dentate gyrus, new neurons may develop in adult mammals. Neuroendocrine and genetic factors regulate development of the new hippocampal dentate gyrus neurons. In addition to reduced neurogenesis of hippocampal neuronal cells with stress, there is also morphologically demonstrated retraction of apical dendrites of cornu ammonis 3 (CA3) pyramidal cells. Tianeptine prevents changes in hippocampal volume and preserves cell proliferation.7

Sheline et al6 demonstrated hippocampal volume loss in medically healthy women with recurrent MDD. In the study, 24 women aged 23 to 86 years with a history of recurrent MDD without medical comorbidity were compared to 24 normal controls.8 The investigators found no relationship between age and hippocampal volume loss. They also found a direct relationship of total lifetime depression duration with bilateral hippocampal volume loss and smaller amygdala core nuclei volume. Furthermore, women with recurrent MDD that was in remission had verbal memory loss.8 This memory loss implies that MDD—especially recurrent MDD, even if in remission—can be an organic brain disease. The American Psychiatric Association’s position is that the aim of treatment in mood disorder is total remission, to provide the least impairment and reduced risk of recurrence.8

Hippocampal function is crucial in verbal memory. It has been suggested that the amygdala, which comprises several nuclei, enables long-term memory but does not store memory.29 Of the nuclei within the amygdala, the basolateral complex affects long-term memory through its numerous projections. Memory is promoted by stress or excitement. Tianeptine, but not fluoxetine, inhibits stress-induced hypertrophy and reduces extracellular glutamate in the basolateral nucleus of the amygdala.29,30

In the search for a model to study and explain mood disorder, maladaptive neuropsychiatric changes offer a cogent disease model that is reproducible. However, these neuropsychiatric changes fail as a biologic marker because of the lack of clinical availability and the overlap with other diseases, such as anxiety disorder. Variability in reestablishing normal neuroplasticity implies that mood and anxiety disorders may present with permanent brain disease.

Edward H. Tobe, DO
Marlton, New Jersey

References

(continued)


**LETTERS**

**New Therapeutic Options: Management Strategies to Optimize Glycemic Control**

To the Editor:

I read the March 2010 supplement to *JA O—The Journal of the American Osteopathic Association* titled “Advances in Diabetes Management: Slowing Disease Progression” with great interest. However, I was concerned about the following statement made by Jeffrey S. Freeman, DO, in his article on management strategies for optimizing glycemic control: “Traditional antihyperglycemic agents—thiazolidinediones and sulfonylureas—often fail to maintain glycemic goals long-term, in part, because they do not target the underlying pathophysiologic processes of type 2 diabetes mellitus [T2DM] [type 2 diabetes mellitus].”

I disagree with this statement. Results of the United Kingdom Prospective Diabetes Study (UKPDS)3 clearly showed that diet modification, sulfonylureas, metformin, and insulin did not slow β-cell failure. However, A Diabetes Outcome Progression Trial (ADOPT)4 clearly showed that rosiglitazone maleate did slow β-cell failure, compared to sulfonylureas and metformin.

I do agree with Dr Freeman’s position that incretins are an excellent class of drugs for sustained glycemic control.5 Incretins probably also prevent β-cell failure, which I believe is the way of the future in terms of trying to alter the course of diabetes mellitus progression.

For the sake of balance, I felt that these points needed to be published.

David A. Sisam, DO
Department of Endocrinology, Terrebonne General Medical Center, Houma, Louisiana

**References**


**Response**

I thank Dr Sisam for his interest and remarks.

Dr Sisam’s comments underscore the challenges we face in maintaining long-term glycemic control in patients with type 2 diabetes mellitus (T2DM). As is mentioned in the March 2010 *JA O* supplement, “Advances in Diabetes Management: Slowing Disease Progression,” loss of β-cell mass and decline in β-cell function, which lead to worsening glycemic control, are known to occur with disease progression in T2DM. This β-cell failure is consistent with the increasing failure over time of monotherapy with sulfonylurea, metformin, or insulin in patients with type 2 diabetes mellitus: progressive requirement for multiple therapies (UKPDS 49). *JAMA.* 1999;281(21):2005-2012.
