Teaching Medical Students an Integrative Approach to Chronic Musculoskeletal Pain

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EDITORIAL

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Painful conditions of the musculoskeletal system are some of the most important, and frustrating, chronic problems encountered in a clinical practice. One in two adults reported a chronic musculoskeletal condition, according to a recent national survey [1], twice the rate of reported cardiovascular or respiratory conditions. Yet despite the prevalence of chronic musculoskeletal pain, physicians often feel less confident in their treatment planning for pain patients than they do for others in their practice. Conventional medical approaches to chronic musculoskeletal pain, such as non-steroidal anti-inflammatory medications and muscle relaxants may be ineffective for some patients. In addition, these patients consume more than their share of scarce healthcare resources. Patients with clinically diagnosed fibromyalgia were found to incorrect twice as many direct healthcare costs as matched controls [2].

Inadequacy of musculoskeletal medical education

It might be tempting to assume that physicians are relatively ineffective at treating chronic musculoskeletal pain because the condition is intrinsically untreatable. However evidence is emerging that this assumption is incorrect. The deficit may not be in the patients’ ability to recover, but rather in the skill of the physician to treat him. We physicians fancy ourselves masters of human dysfunction and disease, yet there is a surprising deficit in our training. We are well skilled in cardiology, gastroenterology and pharmacology. Yet we are surprisingly unskilled in the workings of the musculoskeletal system. A survey of medical students at Harvard University revealed that the students felt inadequately prepared in musculoskeletal medicine and they lacked both clinical confidence and cognitive mastery of the field [3]. They rated musculoskeletal medicine to be of major importance but noted that the amount of curricular time spent on the topic was low. Objective assessment of their knowledge as evaluated by scores on a competency exam matched the student perception, with only 7% of third year students and 26% of fourth year students passing the exam. This finding has been replicated in other studies. A musculoskeletal competency exam, validated by 240 internal medicine program directors, was administered to 85 recent medical school graduates. Seventy eight percent of them failed to demonstrate basic competency according to the criterion set by the program directors [4]. It is becoming clearer that the discrepancy between the magnitude of musculoskeletal conditions and the competency of physicians in musculoskeletal medicine is a result of educational deficiencies in U.S. medical schools.

Better training in the integrative treatment of musculoskeletal pain may result in improved outcomes for patients with chronic musculoskeletal pain. Myofascial pain syndrome, once considered a questionable diagnosis, has now been evaluated in well designed studies with results published in major medical journals [5]. Disorders as varied as chronic pelvic pain [5], chronic back pain, chronic neck and shoulder pain and recurrent headaches can be associated with myofascial dysfunction. Well trained physicians can diagnose this on physical exam, by examining for trigger points, and begin treatment modalities in the office. A myofascial trigger point is a hyperirritable spot within a taut band of skeletal muscle which is painful when compressed. When firmly palpated, trigger points often produce characteristic referred pain. Trigger points can be treated with non invasive measures such as targeted massage and invasive measures such as dry needling or injection of local anesthetics. Patients can be taught to self administer trigger point massage, which increases self efficacy and feelings of control both of which may be lacking in patients with chronic musculoskeletal pain.

In support of an integrative approach.

Improved musculoskeletal education is an important, but insufficient, step in improving the care of patients with chronic musculoskeletal pain. Pharmaceuticals and surgery, mainstays of the conventional medical approach to pain, are frustratingly ineffective for some patients with chronic musculoskeletal pain. As academic institutions embrace the rigorous evaluation of complementary therapies, evidence is emerging that expands the physician’s pain fighting toolbox. A recent randomized, single blinded study of Tai Chi in patients with fibromyalgia showed that twelve weeks of participation in twice weekly Tai Chi sessions produced clinically significant improvements in Fibromyalgia Impact Questionnaire scores when compared with a control.
intervention of wellness education and stretching [6]. Tai Chi classes are widely available in the community and patients can practice at home with the support of an inexpensive DVD. In addition, a randomized trial of mindfulness meditation was found to decrease depressive symptoms, often associated with chronic pain, in fibromyalgia patients [7]. These low risk and potentially beneficial interventions should be in the armamentarium of all physicians who treat fibromyalgia patients. Other modalities such as osteopathic techniques and acupuncture may also be useful in the treatment of chronic musculoskeletal pain. At the Center for Integrative Medicine we conducted two Meta analyses of acupuncture for low back pain [8] and osteoarthritis of the knee [9] and found clinically relevant benefits in both chronic musculoskeletal conditions.

To address the deficiency in musculoskeletal education and add an introduction to evidence based complementary modalities for the treatment of chronic musculoskeletal pain, medical school curriculum will have to be adjusted. At the University of Maryland we integrate evidence based discussions of mind body medicine, acupuncture, manual therapies, and meditative movement into the standard medical school curriculum and offer more intensive integrative medicine courses for interested students.

Others have designed and implemented a self contained system based curriculum intended to augment the musculoskeletal education of medical students. The course consisted of 44 lecture hours over six weeks and included 17 hours of small group discussion. Students were highly satisfied with the class and their scores on a musculoskeletal competency exam were significantly higher (77.8%) than historical controls (59.6%) [p<0.05] [10].

In conclusion, the discrepancy between the widespread impact of chronic musculoskeletal pain conditions and the relative paucity of medical school curricular time devoted to its treatment provides an opportunity for improvement in medical education. A solid understanding of the musculoskeletal system coupled with an exposure to evidence based complementary medicine modalities will empower the physicians of the future to confidently create integrative treatment plans for patients with chronic musculoskeletal pain.

REFERENCES