The care of patients with diabetes mellitus, particularly those with type 2 diabetes mellitus and those with diabetic complications, has long been influenced by an interest in nonpharmacological interventions and lifestyle modifications.
Though much of current interest has focused on controlling obesity — individually and in communities — it is noteworthy that more than 6 million adults in the United States with diabetes use some form of complementary and alternative medicine (CAM) therapies as an adjunct to their care. Even metformin, the pharmaceutical agent now commonly used in the management of type 2 diabetes mellitus, should in theory provide ample opportunities for osteopathic physicians to offer care that’s unique and distinctive.

This growing interest in alternative or additional interventions, beyond oral agents and insulin in the management of type 2 diabetes mellitus, should in theory provide ample opportunities for osteopathic physicians to offer care that’s unique and distinctive.

Osteopathic manipulative treatment (OMT) is certainly one area where such an opportunity exists. But, as many have wisely recognized, the practice of osteopathic medicine has always been much more than the use of OMT.

In his 1899 seminal work, Philosophy of Osteopathy, Andrew Taylor Still, MD, DO, the "Discoverer of the Science of Osteopathy and President of the American School of Osteopathy," as the subheading indicates, himself noted that the purpose of his treatise was “to teach principles ... and not rules.” Dr Still hoped that by “a knowledge of the normal and abnormal,” students of the growing field of what is now known as osteopathic medicine would attain “a specific knowledge for all diseases.”

Such a basic approach to medical and surgical conditions has been a sine qua non in osteopathic undergraduate, graduate and continuing medical education. In addition, for more than a century, much of the allopathic medical education literature jibes very well with our modern understanding of specific clinical diseases and disorders and the presence or absence of specific or pattern-based osteopathic somatic dysfunction and musculoskeletal asymmetry.

We know that Dr Still managed patients with diabetes by using osteopathic manipulative treatment (OMT). In addition, patients being treated for diabetes today are often managed by osteopathic physicians, with or without OMT. However, osteopathic musculoskeletal and palpatory findings have not been extensively studied in this disease.

Excellent opportunities exist for researchers and academicians to demonstrate and confirm in larger clinical trials the benefits of applying OMT and taking an osteopathic approach to treating patients with diabetes.

One example of promising research in OMT for patients being treated for diabetes is instructive before considering the larger role of osteopathic philosophy and, in Dr Still’s words, principles rather than the rules.

In an elegant case-controlled study of osteopathic palpatory findings in type 2 diabetes mellitus published last year, John C. Licciardone, DO, and colleagues at the University of North Texas Health Science Center—Texas College of Osteopathic Medicine’s Osteopathic Research Center studied 92 subjects who had type 2 diabetes mellitus. These subjects were...
controlled for age, sex, and presence of hypertension and clinical depression and measured against the presence of 30 osteopathic palpatory findings.3

Since there is a temporal lag between the pathogenesis and progression of type 2 diabetes mellitus and any subsequent osteopathic palpatory finding that may be detected, the authors of this study had the subjects labeled as cases or controls, respectively, if a given osteopathic palpatory finding was present or absent.

Unfortunately, because of difficulty matching for controls and cases, there were more subjects in the study who had type 2 diabetes mellitus (60 subjects) than those who did not (32 subjects). The median duration of type 2 diabetes mellitus since diagnosis was five years.

Each subject in the study, nonetheless, was independently examined by two osteopathic manipulative fellows (osteopathic medical students who had been selected to undertake an additional year of undergraduate training in osteopathic manipulative medicine) during the same clinical visit.

A total of six OMM fellows participated in the study and each had received training from senior faculty members that included standard criteria for determining the presence or absence of specific osteopathic palpatory findings.

In a useful study design, the fellows were blinded to the type 2 diabetes mellitus status of the subjects during the examination and subjects were instructed not to share information about health-related matters during the clinical encounters.

The palpatory component of the study assessed five elements that were felt by the authors to be possible manifestations of osteopathic somatic dysfunction in type 2 diabetes mellitus due to chronic sympathetic activity. These included skin changes (i.e., coolness or paleness), trophic changes (e.g., dry versus scaly skin), tissue changes (e.g., ropy or thickened), tenderness, and immobility (defined as restricted motion).

Cohen’s kappa was used to measure interexaminer agreement between fellows for each element of somatic dysfunction after adjusting for chance agreement. Interexaminer reliability was also aggregated according to spinal segment level and laterality. Logistic regression was used to compute the crude odds ratio and 95% confidence intervals for the associations between type 2 diabetes mellitus and the palpatory findings.

The study is more noteworthy for its design and execution, and for its honest and nondogmatic approach, than for its results. Tissue changes seen along spinal segments T11 through L2 on the right side (i.e., doughy, ropy, thickened or fibrotic interstitial tissue) were the strongest and most consistent osteopathic palpatory findings associated with type 2 diabetes mellitus.

The study’s authors offered a number of explanations for these findings, including the presence of reflex viscerosomatic changes directly related to the progression of type 2 diabetes mellitus. However, they also recognized the need for larger prospective studies before conclusions could be drawn on the osteopathic diagnosis and management of diabetes mellitus with OMT.

As mentioned earlier, the osteopathic approach to chronic diseases like type 2 diabetes mellitus encompasses much more than OMT. “The musculoskeletal system plays a surprisingly large role in major public health problems,” writes Felix J. Rogers, DO, “but it is necessary for osteopathic physicians to expand our perspective beyond a focus on OMT to include exercise and function of the skeletal muscle itself.”4

An essential approach for the osteopathic physician to follow, suggests Dr Rogers, is to incorporate evidence-based guidelines as they...
This patient-centered approach may include as warranted the following:
- the delivery of OMT
- the promotion of a personal fitness program tailored to the patient
- diet and nutritional information that is culturally sensitive
- use of pharmaceutical agents
- plasma glucose and/or hemoglobin A1C measurement or monitoring as appropriate (guided by evidence-based national guidelines)
- referrals to specialists for specific interventions as needed—podiatry and ophthalmology to name the most crucial.

Osteopathic physicians have an important role to play in the management of type 2 diabetes mellitus. While the specific “rules” to follow may have changed since Dr Still’s time, the essential principles remain as a philosophical underpinning for the management of all chronic diseases.

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