

Letters to the Editor



Dear Editor:

We very much appreciated the excellent article by Jackson and Steele,¹ "Osteopathic treatment of asthma: A literature review and call for research" and would like to pass along some additional information on this important topic.

With regard to asthma pathogenesis, the autonomic imbalance model in its various forms has been widely explored. However, the *vasomotor* component of asthma, with respect to autonomic imbalance, represents a significant although relatively obscure aspect that holds great potential as a research model linking somatic dysfunction to the pathophysiology of asthma. Charles Hazzard, an influential early osteopath, summarized the effects of lesions *and* asthma as abnormal motor effects, and abnormal vasomotor effects:

"... lesions cause abnormal motor effects both in arousing spasmodic conditions of the muscles of the bronchial walls, and in the vasomotor activity that produces the hyperemia of the mucous membrane."²

The traditional osteopathic perspective coincides with modern views on nervous system involvement in asthma. Dysautonomia has been de-

scribed in asthma with an emphasis on hyper-responsiveness of the parasympathetic system^{3,4} beta-adrenergic hypo-responsiveness⁵ or both.^{6,7} In contrast to the relatively dense parasympathetic nerve supply to airways, sympathetic (adrenergic) innervation is sparse in humans.⁸ However, sympathetic innervation of the bronchial blood vessels is considerable. Thus, beta-adrenergic hypo-responsiveness may reflect an inhibition of the sympathetic system which results in vasodilation of the bronchial blood vessels. Hyperemia of bronchial vessels in asthmatics has been noted^{9,10,11,12} and attributed to sympathetic vasodilation.¹³ Exercise-induced asthma is thought to be produced by increased bronchial circulation.^{14,15}

With regard to the widely publicized asthma study by Balon et al,¹⁶ "active" and "simulated" chiropractic manipulation were used as adjunctive treatment for childhood asthma. The active treatment consisted of "manual contact with spinal or pelvic joints followed by low-amplitude, high velocity directional push often associated with joint opening, creating a cavitation, or "pop". This treatment is a standard direct technique used by a wide variety of manual therapy practitioners, primarily chiropractors and osteopaths. The simulated treatment involved soft-tissue massage and gentle palpation to the spine, paraspinal muscles, and shoulders. Jongeward questioned the appropriateness of the simulated treatment, noting that standard chiropractic practice commonly includes soft tissue work.¹⁷ Furthermore, the sham treatment in the Balon et al study bears a marked similarity to a traditional osteopathic treatment for asthma^{2,18,19,20} all documented on the internet.²¹

The authors of the study summarized the simulated treatment by stat-

ing, "Hence, the comparison of treatments was between active spinal manipulation as routinely performed by chiropractors and hands-on procedures without adjustments or manipulation." Apparently, these investigators were unaware of the early osteopathic works addressing asthma and the more recent literature on OMT for respiratory problems in general, particularly as cited in *Osteopathic Considerations in Systemic Dysfunction*.²²

The results as reported by the researchers were, "Symptoms of asthma and use of Bagonists decreased and the quality of life increased in both groups, with no significant differences between the groups." Based on this equality of improvement, the authors concluded, "the addition of chiropractic spinal manipulation to usual medical care provided no benefit".¹⁶ In our view, this is unfortunate, because the data indicates that the subjects in both groups improved after being treated by standard chiropractic and a rather crude form of traditional osteopathy.

Our letter published in the *New England Journal of Medicine*²³ pointed out the methodological flaws of such designs where sham treatments closely resemble specific traditional osteopathic techniques. Our article in the *Journal of Manipulative and Physiological Therapeutics*²⁴ addresses the question of physiological effects of manual therapy and appropriate sham treatments in more detail and, like the Jackson and Steele article, emphasizes the need for more research.

References

1. Jackson KM and Steele KM: Osteopathic treatment of asthma: A literature review and call for research. *AAO Journal*, 1999; 9(4):23-27
2. Hazzard C: *The Practice and Applied Therapeutics of Osteopathy*. 3rd ed. Kirksville, MO; Journal Printing Company, 1905:75-80.
3. Kallenbach JM, Webster T, Dowdeswell R, Reinach SG, Millar RN, Zwi S: Reflex heart rate control in asthma. *Chest*, 1985; 87:644-648.
4. Shah PKD, Lakhota M, Mehta S, Jain SK, Gupta GL: Clinical dysautonomia in patients with bronchial asthma. *Chest*, 1990; 98:1408-1413.
5. Casale TB: The role of the autonomic nervous system in allergic diseases. *Annals of Allergy*, 1983; 51:423-429.
6. Kaliner M, Shelhamer JH, Davis PB, Smith LJ, Venter JC: Autonomic nervous system abnormalities and allergy. *Annals of Internal Medicine*, 1982; 96:349-357.
7. Jindal SK, Kaur SK: Relative bronchodilatory responsiveness attributable to sympathetic and parasympathetic activity in bronchial asthma. *Respiration*, 1989; 56:16-21.
8. Nadel JA, Barnes PJ: Autonomic regulation of the airways. *Ann Rev Med*, 1984; 35:451-467.
9. Baier H, Long WM, Wanner A: Bronchial circulation in asthma. *Respiration*, 1985; 48:199-205.
10. Lockhart A, Dinh-Xuan AT, Regnard J, Cabanes L, Matran R: Effect of airway blood flow on airflow. *Am Rev Respir Dis*, 1992; 146:S19-S23.
11. Li X, Wilson JW: Increased vascularity of the bronchial mucosa in mild asthma. *Am J Respir Crit Care Med*, 1997; 156:229-233.
12. Kumar SD, Emery MJ, Atkins ND, Danta I, Wanner A: Airway mucosal blood flow in bronchial asthma. *Am J Respir Crit Care Med*, 1998; 158:153-156.
13. Widdecombe JG: Neural control of airway vasculature and edema. *Am Rev Respir Dis*, 1991; 143:S18-S21.
14. McFadden ER: Hypothesis: Exercise-induced asthma as a vascular phenomenon. *The Lancet*, 1990; 335:880-883.
15. Anderson SD, Daviskas E: The airway microvasculature and exercise induced asthma. *Thorax*, 1992; 47:748-752.
16. Balon J, Aker PD, Crowther ER, Danielson C, Cox PG, O'Shaughnessy D, Walker C, Goldsmith CH, Duku E, Sears MR: A comparison of active and simulated chiropractic manipulation as adjunctive treatment for childhood asthma. *N Engl J Med*, 1998; 339:1013-20.
17. Jongeward BV: Chiropractic manipulation for childhood asthma. *N Engl J Med*, 1999; 340:391-392.
18. Barber ED: *Osteopathy Complete*. 4th Ed. Kansas City, MO: Hudson-Kimberly Publishing Company, 1898:60-68.
19. Goetz, EW: *A Manual of Osteopathy*. 2nd ed. Cincinnati, OH: Natures's Cure Co., 1909:85-86.
20. Murray CH: *Practice of Osteopathy* (6th Edition). Elgin, Illinois: CH Murray, 1925.
21. McMillin D: The Early American Manual Therapy website is located at: <http://members.vsi.net/mcmillin/1998>.
22. Kuchera M, Kuchera WA: *Osteopathic Considerations in Systemic Dysfunction*. Kirksville, MO: KCOM Press, 1991.
23. Richards DG, Mein EA, Nelson CD: Chiropractic manipulation for childhood asthma. *N Engl J Med*, 1999; 340(5):391-392.
24. Nelson C, Redwood D, McMillin D, Richards DG, Mein EA: Manual healing diversity and other challenges to chiropractic integration. *J Manipulative Physiol Ther* (2000, in press).

David L. McMillin, MA
Douglas G. Richards, PhD
Eric A. Mein, MD
Carl D. Nelson, DC

Meridian Institute
1853 Old Donation Parkway, Suite 1,
Virginia Beach, Virginia 23454
PHONE: (757) 496-6009
FAX: (757) 496-1013
EMAIL: meridianinst@mindspring.com