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Immunomodulatory Effects of Acupuncture in the Treatment of Allergic Asthma: A Randomized Controlled Study

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Stefanie Joos, M.D.

Department of Anaesthetics, University of Heidelberg, Heidelberg, Germany.

Claus Schott, M.D.

Department of Anaesthetics, University of Heidelberg, Heidelberg, Germany.

Hua Zou, M.D.

Department of Anaesthetics, University of Heidelberg, Heidelberg, Germany.

Volker Daniel, M.D.

Department of Immunology, University of Heidelberg, Heidelberg, Germany.

Eike Martin, M.D.

Department of Anaesthetics, University of Heidelberg, Heidelberg, Germany.

Objective: According to Traditional Chinese Medicine (TCM) acupuncture is a suitable treatment for complex chronic diseases such as bronchial asthma. In a randomized, controlled study we investigated immunologic effects of Chinese acupuncture on patients with allergic asthma.

Patients and Methods: The effects of acupuncture treatment given according to the principles of TCM (TCM group, $n = 20$) were compared with those of acupuncture treatment using points not specific for asthma (control group, $n = 18$). All patients were treated 12 times for 30 minutes over a time period of 4 weeks. Patients' general well-being and several peripheral blood parameters (eosinophils, lymphocyte subpopulations, cytokines, *in vitro* lymphocyte proliferation) were determined before and after acupuncture treatment.

Results: In the TCM group, significantly more patients indicated an improvement in general well-being (79% in the TCM group versus 47% in the control group; $p = 0.049$) after acupuncture treatment. The following changes were found in the TCM group: within the lymphocyte subpopulations the CD3⁺ cells ($p = 0.005$) and CD4⁺ cells ($p = 0.014$) increased significantly. There were also significant changes in cytokine concentrations: interleukin (IL)-6 ($p = 0.026$) and IL-10 ($p = 0.001$) decreased whereas IL-8 ($p = 0.050$) rose significantly. Additionally, the *in vitro* lymphocyte proliferation rate increased

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significantly ($p = 0.035$) while the number of eosinophils decreased from 4.4% to 3.3% after acupuncture ($p > 0.05$). The control group, however, showed no significant changes apart from an increase in the CD4⁺ cells ($p = 0.012$).

Conclusion: The results imply that asthma patients benefit from acupuncture treatment given in addition to conventional therapy. Furthermore, acupuncture performed in accordance with the principles of TCM showed significant immune-modulating effects.

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Immunomodulatory Effects of Acupuncture in the Treatment of Allergic Asthma: A Randomized Controlled Study

STEFANIE JOOS, M.D.,¹ CLAUS SCHOTT, M.D.,¹ HUA ZOU, M.D.,¹
VOLKER DANIEL, M.D.,² EIKE MARTIN, M.D.¹

ABSTRACT

Objective: According to Traditional Chinese Medicine (TCM) acupuncture is a suitable treatment for complex chronic diseases such as bronchial asthma. In a randomized, controlled study we investigated immunologic effects of Chinese acupuncture on patients with allergic asthma.

Patients and Methods: The effects of acupuncture treatment given according to the principles of TCM (TCM group, $n = 20$) were compared with those of acupuncture treatment using points not specific for asthma (control group, $n = 18$). All patients were treated 12 times for 30 minutes over a time period of 4 weeks. Patients' general well-being and several peripheral blood parameters (eosinophils, lymphocyte subpopulations, cytokines, *in vitro* lymphocyte proliferation) were determined before and after acupuncture treatment.

Results: In the TCM group, significantly more patients indicated an improvement in general well-being (79% in the TCM group versus 47% in the control group; $p = 0.049$) after acupuncture treatment. The following changes were found in the TCM group: within the lymphocyte subpopulations the CD3⁺ cells ($p = 0.005$) and CD4⁺ cells ($p = 0.014$) increased significantly. There were also significant changes in cytokine concentrations: interleukin (IL)-6 ($p = 0.026$) and IL-10 ($p = 0.001$) decreased whereas IL-8 ($p = 0.050$) rose significantly. Additionally, the *in vitro* lymphocyte proliferation rate increased significantly ($p = 0.035$) while the number of eosinophils decreased from 4.4% to 3.3% after acupuncture ($p > 0.05$). The control group, however, showed no significant changes apart from an increase in the CD4⁺ cells ($p = 0.012$).

Conclusion: The results imply that asthma patients benefit from acupuncture treatment given in addition to conventional therapy. Furthermore, acupuncture performed in accordance with the principles of TCM showed significant immune-modulating effects.

INTRODUCTION

With a worldwide increasing prevalence, asthma represents a major and costly health problem. Direct and indirect costs by the disease of asthma add up to 1%–2% of the budget of the health system in Germany (Randerath et al., 1999). Therefore, new therapeutic

approaches and treatment strategies are urgently needed.

In the Western world there has been considerable interest in acupuncture as a possible complementary treatment for bronchial asthma. The literature to date provides evidence that acupuncture used in addition to conventional drug therapy in the treatment of patients with

¹Department of Anesthetics, and ²Department of Immunology, University of Heidelberg, Heidelberg, Germany.

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