

Acupuncture for the Treatment of Lisinopril-Associated Diarrhoea: Case Report

Abstract

Up to 60 to 70 million Americans experience gastrointestinal distress, with a substantial portion of that associated with pharmaceutical drug side-effects. Acupuncture therapy has been shown to regulate the gastrointestinal system by both up- and down-regulation of motility, inducing the production of gastric secretions, and stimulating neuronal activity. Acupuncture offers powerful treatment options for gastrointestinal distress with minimal side-effects and has previously been utilised as an adjunct treatment for HIV retroviral therapy-induced diarrhoea. This case study illustrates the beneficial use of acupuncture for the treatment of lisinopril-associated diarrhoea.

Introduction

Diarrhoea is a common side-effect of pharmacological drugs. Lisinopril, an angiotensin converting enzyme (ACE) inhibitor used in the treatment of high blood pressure, heart failure, and post myocardial infarctions (heart attacks), commonly has diarrhoea as an associated side effect¹⁰. There is between a 1 and 10 per cent occurrence of gastrointestinal (GI) side-effects that accompany the administration of ACE inhibitors. This side effect can have an adverse effect on a patient's quality of daily life and severely limit many activities. Commonly, GI associated side-effects are treated with changes in diet, anti-diarrhoeal agents, or both.¹ These diets are typically high calorie, high protein and low fat, which can be deleterious in patients with concomitant diseases such as diabetes. Because GI diseases have been reported to affect an estimated 60 to 70 million US citizens, leading to approximately \$142 billion in direct and indirect costs, a cost effective solution is highly sought after.² One alternative solution to this problem is the addition of acupuncture to a patient's treatment protocol to help mitigate the diarrhoea and increase quality of life in the patient.

According to Traditional Chinese Medicine (TCM) theory, are disharmonies of the Spleen, Stomach, and Large Intestine.^{1,6} Therefore, acupuncture treatment typically focuses on the Spleen, Stomach, and Large Intestine channels. Common points for GI disturbances are Zusanli ST-36, Neiguan P-6, Shangjixu ST-37, Zhongwan REN- 12, and Tianshu ST-25, although others can be added to more

accurately address the imbalance.⁴ There has been documentation of acupuncture to treat chemotherapy-related GI distress, postoperative nausea, peptic ulcers, ileus, irritable bowel syndrome, constipation, and diarrhoea.^{4,8} It has also been shown to be effective in acute/chronic enteritis, dysentery diarrhoea, chronic diarrhoea, chronic atrophic gastritis and analgesia for endoscopy.^{3,11} It has been hypothesised that acupuncture has a 'dual regulatory effect on GI motility, which can promote gastric peristalsis or suppress it.'⁴ This dual regulatory effect is in line with the TCM theory of bringing balance and harmony to the channels and thus, the body.⁹ Acupuncture has been found to affect motility, neurological activity, gastric secretion, modulate the GI barrier, and modulate the brain-gut axis.^{4,11}

Associated with this, acupuncture has been shown to treat chronic diarrhoea as a side-effect of pharmacological medications. Diarrhoea is one of the most common complications associated with antiretroviral therapy in patients infected with human immunodeficiency virus (HIV). In HIV positive patients, acupuncture has been found to reduce the frequency of diarrhoea to less than one episode a day, and improves control over timing and consistency.¹ This case presents the treatment of a patient with acupuncture resulting in successful resolution of lisinopril-induced diarrhoea.

Presenting condition

A 66-year old male presented to clinic with concerns of chronic diarrhoea for the last six to seven months

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Point	Therapeutic Use
Hegu LI-4	Regulates intestines
Tianshu ST-24	Regulates intestines, treats diarrhoea
Zusanli ST-36	Tonifies qi and blood, regulates the intestines
Shangjuxu ST-37	Regulates bowels and stops diarrhoea
Sanyinjiao SP-6	Tonifies Spleen and Stomach, regulates digestion
Daheng SP-15	Strengthens spleen function, reduces diarrhoea
Qihai REN-6	Tonifies and regulates qi, reduces diarrhoea
Zhongmen REN-12	Tonifies Stomach and Spleen

Table 1: Acupuncture points used with indications

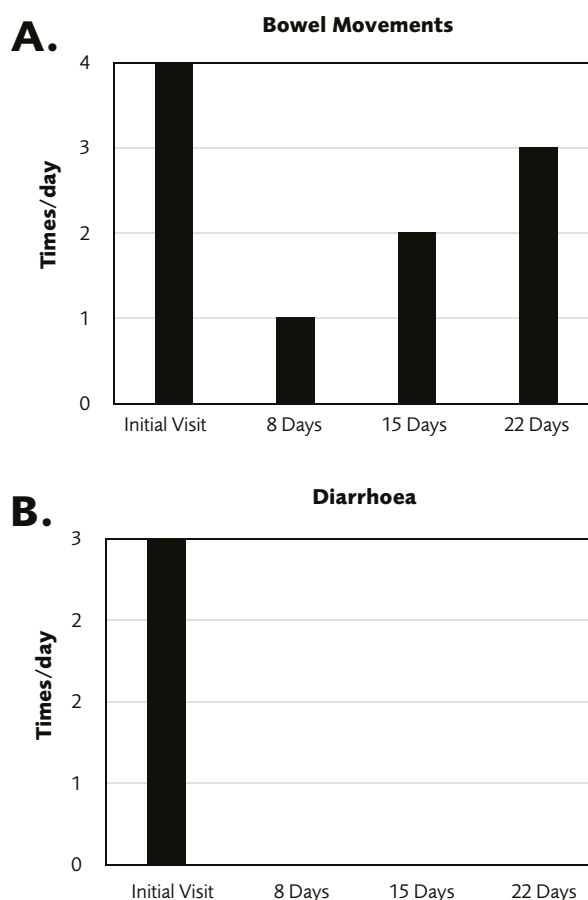
associated with the administration of lisinopril. He had a past medical history of hypertension, for which he was being treated with the lisinopril. Upon intake, he reported three or more bowel movements a day with diarrhoea. The diarrhoea was more common at night due to the timing of his medication schedule. The diarrhoea significantly affected the patient's quality of life, including his ability to sleep. The patient also reported inability to gain weight, low appetite and fear of leaving his house due to the diarrhoea.

Intervention

The patient's TCM diagnosis was Spleen qi deficiency based on the symptoms of chronic diarrhoea for seven months with reduced energy levels (rated five out of 10 with 10 being the best), gas and bloating. The Spleen, according to TCM, is in charge of digestion. The goal of the acupuncture protocol was to reinforce Spleen qi to relieve the diarrhoea. Acupuncture needles were placed for 30 minutes with additional electrical stimulation at a frequency of 43 hertz. The patient had four acupuncture treatments, each approximately one week apart. Table 1 reflects the points used and their indications.

Outcomes

Eight days after the initial treatment, the diarrhoea had completely resolved (Fig. 1B). The patient reported bowel movements decreasing from over four per day to an one to three a day (Fig 1A). He no longer reported any diarrhoea and his stools were well formed. Fifteen days after initial treatment, the patient reported well-formed bowel movements averaging two to three times per day (Fig. 1A and B). At 22 days after initial treatment, and on his third treatment, the patient reported three well-formed bowel movements per day, with no diarrhoea (Fig. 1A and B). The patient also reported increased appetite, weight gain (which was favourable), and he was no longer experiencing fear of eating due to possible diarrhoea.



Figures 1A & 1B: Patient symptom severity. The patient's GI symptoms were assessed at the indicated times. A) Symptom severity of bowel movements measured in times/day. B) Symptoms severity of diarrhoea episodes measured in times/day.

Discussion

This case represents the successful resolution of lisinopril-induced diarrhoea using acupuncture. ACE inhibitors, like lisinopril, are used by tens of millions of Americans to treat high blood pressure and heart attacks. Unfortunately, diarrhoea is a common side-effect in these patients and leads to other complications and a reduced quality of life. As shown in this case, acupuncture offers an alternative approach to treat this side-effect commonly associated

with these pharmaceuticals. Previously, acupuncture has demonstrated therapeutic value in treating diarrhoea associated with antiretroviral drugs prescribed to HIV patients. This case supports the use of acupuncture in treating diarrhoea associated with other pharmaceutical drugs, including lisinopril. This treatment protocol offers a safe alternative without affecting the patient's prescribed drug regime. Overall acupuncture appears to be an effective treatment for drug-related diarrhoea.

Dr. Michaela Falkner, 1 NMD, is a licensed naturopathic doctor in California and Arizona. During her time in naturopathic medical school and residency, she took special interest in acupuncture and Traditional Chinese Medicine. She started her journey in alternative medicine after realising the healing power of herbs and diet. She currently resides in San Francisco, where she works with other practitioners of various modalities to help heal the whole person.

Dr. Yong Deng, 1 OMD, LAc, is an international expert in Chinese medicine and acupuncture. He earned his medical degree from and is former faculty of Chengdu University of Traditional Chinese Medicine in China. He has been teaching and practising at medical schools in China and the United States for more than 33 years with a concentration in Traditional Chinese Medicine for a wide range of diseases and conditions. Due to his extensive knowledge, Dr. Deng was invited to SCNM in 1996 and currently serves as the chair and professor within the Department of Acupuncture and Oriental Medicine. Dr. Deng is a licensed acupuncturist in Arizona and works with MDs in hospitals and several fertility treatment centres within the Phoenix area. He is a member of the State of Arizona Acupuncture Board of Examiners and has published over 30 papers and several books including the *Encyclopedia of Chinese and U.S. Patent Herbal Medicines*.

Dr. Jeffrey Langland, 1,2 PhD, received his doctorate degree from Arizona State University in the area of virology in December 1990. His area of interest at that time and still today is investigating and understanding the complex cellular defenses against microorganisms. After graduating from Arizona State, he was a post-doctoral fellow at UC Davis studying oncolytic viruses, followed by a post-doctoral position at the University of Wyoming comparing similarities between plant and human defenses against viruses. In 1995, he returned to Arizona State University as a Research Assistant Professor. In this capacity he has instructed several courses including General Virology and The Biology of AIDS. In August 2007, Dr. Langland became the first joint faculty member at Southwest College of Naturopathic Medicine, maintaining his position at ASU and becoming the instructor for Medical Microbiology and Concepts in Research courses. Dr. Langland is chair of the Research Department at SCNM bringing new insight and a fresh approach to research for the students and to the eld of naturopathic medicine.

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