

## **Acupuncture Treatment for Low Back Pain in Japan: A Brief Review Based on Clinical Research Papers**

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### **Abstract**

We reviewed the present status of acupuncture treatment methods for low back pain (LBP) in Japan, based on research papers such as questionnaire survey on practitioners, case-series study, and clinical trial on acupuncture.

Acupuncture treatment method for LBP in Japan is diverse, blended, and non-uniform. Many Japanese acupuncturists' practice is based on mixed approach of modern Western and traditional Oriental medicine. Based on some survey results, Japanese acupuncturists generally take importance on local tenderness even when they mainly use distal acupoints. Also, they take relatively less importance on Deqi.

Even though many clinical trials of acupuncture for LBP have been published in Japan, so far we have not been able to confirm which acupuncture method is the best for which pathology of low back pain. In the future we should more consider a comparison of various treatment styles and therapists' experience and skills.

*Key words: Acupuncture, Japan, Low Back Pain, Tenderness, Deqi*

### **Introduction**

According to a nationwide random sampling survey on low back pain (LBP), approximately 30% of Japanese people have an experience of LBP in the past one month, regardless of age and gender except women in their age of twenties and seventies<sup>1)</sup>. Japanese people who have LBP use many kinds of complementary and alternative medicine (CAM) such as massage, acupuncture, chiropractic and shiatsu as well as conventional medicine such as drugstore and hospital<sup>2)</sup>. Acupuncture is used for LBP by 25% of housewives, 17% of factory workers and 9% of hospital workers although drugstore, hospital and massage are more frequently visited<sup>2)</sup>.

Our nationwide telephone survey conducted in 2005 found that 6.1% of the Japanese people (randomly selected respondents) had used acupuncture

during past 12 months, and 32% had ever used acupuncture in their lifetime<sup>3)</sup>. Acupuncture is used for many kinds of condition in Japan, but in terms of percentages, this therapy is mainly used for musculoskeletal conditions: 43% used for LBP, 33% for stiff neck and shoulder, 8% for shoulder pain, and 7% for knee pain (percentages of who had used acupuncture in 2004)<sup>3)</sup>.

Thus, in Japan, LBP is prevalent and acupuncture is often used for this condition. In this paper, reviewing research papers such as questionnaire survey on practitioners, case-series study, and clinical trial, we briefly introduce the present status of acupuncture treatment methods for LBP in Japan.

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### Treatment Style and Theory of Acupuncture in Japan

Before focusing on LBP, we review the prevalence of each treatment style and theory of acupuncture in Japan. Table 1 shows survey data on readers of "Ido no Nippon (The Japanese Journal of Acupuncture and Manual Therapies)" which is the most selling acupuncture journal in Japan<sup>4</sup>. If we based on these data, at least during early 1990s, the most prevalent acupuncture treatment method used by Japanese acupuncturists was "modern Western" based on anatomy and physiology. Table 2 shows survey data on members of The Japan Society of Acupuncture and Moxibustion (JSAM)<sup>5</sup>. At least during early 2000s, nearly half of the acupuncturists who belonged to the biggest academic society of acupuncture in Japan had practiced acupuncture based on mixed approach of modern Western and traditional Oriental medicine.

### Treatment methods of acupuncture for LBP in Japan

In 1980s, a multi-institution case series study on LBP was conducted by LBP Division, Department

of Research in JSAM. The data from medical charts which were recorded by acupuncture practitioners or acupuncture school teachers in Japan were analyzed<sup>6</sup>. Speculated pathology of the LBP in that study was myofacial/muscle fatigue (67%), spondylosis deformans (11%), facet syndrome (10%), and disc herniation (2%). According to the results, the most frequently used acupoint was BL 25, followed by BL 23, BL 26, BL 24, BL 32, BL 21, BL 60 and BL 40 in descending order. As for non-acupoints, the most frequently targeted muscle was erector spinae, followed by gluteus maximus, and gluteus medius. The most frequently used technique was manual needling, followed by needle retention, electroacupuncture, and moxibustion.<sup>6</sup>

Also in 1980s, a questionnaire survey on 121 members of Nippon Rinsho Shinkyu Konwakai, which is one of the societies of acupuncture practitioners, was conducted<sup>7</sup>. In this society, the most frequently selected points for LBP were local tender points (LTP) and reaction points (RP) in the extremities (29%), followed by LTP and erector spinae muscles (21%), LTP and local RP without tenderness (13%). Frequently used needling techniques were needle retention method regardless of Deqi, sparrow pecking method seeking Deqi, and

**Table 1. Treatment style of acupuncture in Japan<sup>4</sup>. A survey for readers of "Ido no Nippon".**

Style mainly used (NOT only for LBP but all the conditions)	% (of 2184 respondents)	Comments
Modern Western	32.9	based on ideas of anatomy and physiology
Meridian Therapy	23.3	
General conditioning	14.1	Specific method is unknown
Tenderness	11.6	
Taikyoku (holistic) Therapy	3.2	Sawada School
TCM	2.5	
Ryodoraku	2.3	

**Table 2. Treatment theory of acupuncture in Japan<sup>5</sup>. A questionnaire survey of randomly selected members of The Japan Society of Acupuncture and Moxibustion.**

Theory mainly base on (NOT only for LBP but all the conditions)	% (of 145 respondents)	Comments
Eclectic approach	42	modern Western medicine and oriental medicine
Modern Western	37	based on anatomy and physiology
Meridian theory	9	
TCM	4	
Other theories	8	

mixed method of needle retention and sparrow pecking seeking Deqi, in descending order.<sup>7)</sup>

### Clinical trials on acupuncture

In Japan, some clinical trials on acupuncture were conducted at a relatively early stage, e.g., late 1960s and 1970s<sup>8)</sup>. Some of those were on acupuncture for LBP. As of February 2009, using Ichushi Web, PubMed, and our own files, we can locate at least 25 papers of clinical trials, which were conducted in Japan, on acupuncture for LBP without symptom in the lower extremities (i.e., sciatica, disc hernia, and canal stenosis were excluded). Generally clinical trials conducted in Japan had small sample size, and this has not been improving yet. In the trials conducted before 1990, more acupuncturists in private practice participated. After 1990, most of the authors of the trial papers are teachers in universities or acupuncture schools. (Table 3)

There are some types of control group in the clinical trials in Japan. The most frequent type is a

trial on a certain acupuncture treatment method compared with another acupuncture treatment method. This tendency is remarkable in clinical trials on acupuncture conducted in Japan<sup>9)</sup>. The "Another acupuncture methods" are many different kinds such as different acupoint selection, different stimulation, different insertion depth, and so on. The second most frequent type is a trial on acupuncture treatment compared with other medical treatments. The third most frequent type is that acupuncture treatment was compared with sham needling. (Table 4)

### Discussion

As we see the data shown above, acupuncture is one of the most popular complementary or alternative traditional therapies for patients with LBP in Japan, although in general acupuncture is not used very frequently in Japan today: only 6% of the nation per year. "Japanese acupuncture" may represent Meridian therapy for some foreign people, but, ac-

**Table 3. Clinical trials on acupuncture for LBP in Japan (as of Feb 2009): authors' affiliation and sample size**

Publication	No. of trials	Authors' (=acupuncturists') affiliation	Sample size (mean +/- SD)	Comments
1970s	4	practice (4)	50.7 +/- 39.6	2 RCTs, 2 CCTs
1980s	1	hospital (1)	15.0	RCT
1990s	3	acupuncture school (3)	20.7 +/- 4.7	RCT
2000s	17	Acupuncture school (15) practice (1) hospital (1)	28.9 +/- 20.1	16 RCTs, 1 CCT

RCT: randomized controlled trial, CCT: controlled clinical trial (not randomized)

**Table 4. Clinical trials on acupuncture for LBP in Japan (as of Feb 2009): type of control**

Type of comparison	No. of trials	Example	Result (Positive = "better than control")
Acupuncture vs. Another acupuncture method	10	Local points vs. Local points + specific points	Positive : 5 Negative : 5
Acupuncture vs. Other treatment	9	Electroacupuncture vs. TENS	Positive : 6 Negative : 3
Acupuncture vs. Sham needle	5	Needle insertion vs. Tapping with guide tube	Positive : 3 Negative: 2
Acupuncture vs. No treatment	1		Positive : 1

According to the existing survey data, many Japanese acupuncturists' practice is based on mixed approach of modern Western and traditional Oriental medicine. This also applies to acupuncture treatment for LBP. The concept of Western medicine is deeply rooted in Japanese acupuncturists perhaps because of curriculum of schools.

Reviewing the 25 clinical trial papers on acupuncture for LBP, there are more papers which show positive results favoring acupuncture. However, sham controlled trials do not give answers on what kind of acupuncture method is the best for LBP. Even in the trials which compared two different types of acupuncture method, there are some problems of credibility in applying the results to clinical practice. One is a conflict of interest. Authors who believe in one specific treatment method would not wish to get a negative result about their favorite treatment. The other problem is therapists' skill. In many trials which were conducted in recent years, acupuncture treatment was performed by school teachers or postgraduate students. They are not necessarily skilled and well-trained for both types of acupuncture treatment which were compared.

Thus, acupuncture may be effective for LBP, but we have not been sure which "Japanese-style" is the best for which pathology of low back pain in Japanese patients. In the future, for the development of acupuncture practice, we should more focus on pragmatic randomized controlled clinical trials assessing better treatment method of acupuncture for each pathology of LBP. Such trials should more consider the therapists' experience and skill, and the realistic situation in their daily practice.

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