

Trend of Pharmacopuncture Therapy for Treating Cervical Disease in Korea

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Key Words

cervical disk, cervical pain, korean medicine, neck disability, pharmacopuncture, posterior cervical pain

Abstract

Objectives: The purpose of this study is to analyze trends in domestic studies on pharmacopuncture therapy for treating cervical disease.

Methods: This study was carried out on original copies and abstracts of theses listed in databases or published until July 2014. The search was made on the Oriental medicine Advanced Searching Integrated System (OASIS) the National Digital Science Library (NDSL), and the Korean traditional knowledge portal. Search words were 'pain on cervical spine', 'cervical pain', 'ruptured cervical disk', 'cervical disc disorder', 'stiffness of the neck', 'cervical disk', 'whiplash injury', 'cervicalgia', 'posterior cervical pain', 'neck disability', 'Herniated Nucleus Pulposus (HNP)', and 'Herniated Intervertebral Disc (HIVD)'.

Results: Twenty-five clinical theses related to pharmacopuncture were selected and were analyzed by year according to the type of pharmacopuncture used, the academic journal in which the publication appeared, and the effect of pharmacopuncture therapy.

Conclusion: The significant conclusions are as follows: (1) Pharmacopunctures used for cervical pain were Bee venom pharmacopuncture, Carthami-flos pharmacopuncture, Scolopendra pharmacopuncture, Ouhyul

pharmacopuncturen, Hwangryun pharmacopuncture, Corpus pharmacopuncture, Soyeom pharmacopuncture, Hwangryunhaedoktang pharmacopuncture, Shinbaro pharmacopuncture. (2) Randomized controlled trials showed that pharmacopuncture therapy combined with other methods was more effective. (3) In the past, studies oriented toward Bee venom pharmacopuncture were actively pursued, but the number of studies on various other types of pharmacopuncture gradually began to increase. (4) For treating a patient with cervical pain, the type of pharmacopuncture to be used should be selected based on the cause of the disease and the patient's condition.

1. Introduction

Cervical pain means that the collum or regio occipitalis, a muscle, or a muscle and a blood vessel inside the neck are pulled or that pain is felt such areas. In most cases, when a patient moves his or her neck towards a certain direction, pain appears, limiting in the neck's movement, and pressure pain appears on the collum [1]. Cervical pain in Oriental medicine is categorized as stiffness of the neck, headache, pain caused by stiffness, pain caused by stiffness of the neck, paresthesia, etc. The causes are fatigue damage, stress, the after-effect of wind and moiteur, congenital deformation, trauma, external contraction, etc., which lead to the collateral meridian interruption and interruptions in the circulation of energy and blood [2].

Cervical pain in Western medicine is associated with a ruptured cervical disk, cervical spine osteoarthritis, cervical spondylosis, a spinal cord tumor, Torticolis, damage to the cervical muscle and tendon, a cervical sprain, neurogenic muscle tone on a cervical area,

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etc. [3, 4]. Pharmacopuncture therapy is a new form of therapy derived from the conjunction of meridian studies theory and herbal medicine theory. Meridian studies theory includes therapy to treat disease by controlling the functioning of the meridian system through acupuncture. Pharmacopuncture theory includes therapy to treat disease by using the efficacy of herbal medicine [5]. Since pharmacopuncture therapy was first introduced to Korea in 1960s, it has been frequently used clinically and is becoming a common therapy in Oriental medicine. Because pharmacopuncture therapy has been applied as a clinical treatment for some 40 years, studies on it have progressed in a variety of ways, and the results of many studies are becoming grounds for applying pharmacopuncture therapy as a clinical treatment [6, 7].

Recently, a number of studies about pharmacopuncture therapy have been done. Studies by Han *et al* [8] and Kim *et al* [9] dealt with Bee venom pharmacopuncture, and studies by Lee *et al* [10] and Cho *et al* [11] dealt with Hominis placenta acupuncture and Scolopendra pharmacopuncture. Thus, various studies according to the type of pharmacopuncture have been released, but analytic research on pharmacopuncture according to the disease is still not being actively pursued. Also, pharmacopuncture is useful for patients with whiplash injuries and posterior neck pain patients, and its use has been on the rise. Accordingly, to explore the direction of future studies, the authors report the results of an analysis of theses released until now where pharmacopuncture was used for cervical spine disease. For that reason, we investigated until now the trend in research on pharmacopuncture used to treat cervical spine disease.

2. Materials and Methods

Objects for search were original copies and abstracts of theses listed on a database or published until July 2014. The search was made on the Oriental medicine Advanced Searching Integrated System (OASIS), the National Digital Science Library (NDSL), and the Korean traditional knowledge portal. Search words were classified according to symptom and disease. The words concerned with symp-

tom were 'pain on cervical spine,' 'cervical pain,' 'stiffness of the neck,' 'posterior cervical pain,' and 'neck disability,' and those concerned with disease were 'cervical disk,' 'whiplash injury,' 'cervicalgia,' 'Herniated Nucleus Pulposus (HNP),' and 'Herniated Intervertebral Disc (HIVD),' 'ruptured cervical disk,' and 'cervical disc disorder.' These words were selected so that we could find theses involving patient groups undergoing Korean medicine treatments for cervical pain.

The author selected these on research involving pharmacopuncture therapy for cervical spine disease from among theses released in Korea. After the authors had selected or excluded specific theses independently, the decision whether or not to include a thesis was made by the entire research staff. Data extraction was performed by the authors. Such extraction was centered on the type of pharmacopuncture, the related disease and symptoms, the treatment's effectiveness, the publication year.

3. Results

The number of reports in the literature that were searched by using the above method totaled 1594. Among them, 222 were selected; 511 repeated reports and 861 theses that were not related to cervical disease were excluded. Finally, 25 clinical theses related to pharmacopuncture were selected (Table 1). Chronologically, these were released as follows: 1 thesis in 2002, 1 in 2004, 3 in 2005, 3 in 2006, 4 in 2007, 1 in 2009, 1 in 2010, 4 in 2011, 4 in 2012, and 2 in 2013 (Fig. 1).

Among the 25 selected theses, 13 used Bee venom pharmacopuncture, among which a study by Park *et al* [12] involved a randomized controlled trial (RCT) with Hwangryun pharmacopuncture. In six theses, Ouhyul pharmacopuncture was used, and among them, a study conducted by Kim *et al* [13] comparison of the effect of ShinBaro pharmacopuncture to the effect of Ouhyul pharmacopuncture. In addition, three theses involved the use Carthami-flos pharmacopuncture, and one each involved the use of Scolopendra pharmacopuncture, Soyeom pharmacopuncture, and Hwangryunhaedok-tang pharmacopuncture (Fig. 2).

Among the 25 selected theses, 11 came from the Kore-

Table 1 List of selected clinical studies on post neck pain in Korean medicine

N	The lead author	Title of Study (translation from Korean)	Pharmacopuncture	Published year
1	Gang YH [27]	Original article: The clinical effects of Korean bee venom therapy for treating neck pain due to soft tissue damage	Bee venom	2002
2	Choi CM [28]	Shoulder pain and upper limb radiating pain caused by HNP of the C-spine were improved with bee venom acupuncture therapy	Bee venom	2004
3	Lee GS [14]	Clinical study on a patient of cervical radiculopathy treated with bee venom therapy	Bee venom	2005
4	Park GB [24]	Clinical study on bee venom acupuncture for neck pain caused by traffic accidents	Bee venom	2005

(Continued)

N	The lead author	Title of Study (translation from Korean)	Pharmacopuncture	Published year
5	Seol H [32]	Effects of jungsongouhyul herbal acupuncture (JSO) multi-treatment for whiplash injury caused by a traffic accident	Jungsongouhyul	2005
6	Kim KT [22]	A randomized controlled double-blinded study of bee venom acupuncture therapy for a sprain of the C-spine	Bee venom	2005
7	Kim KH [30]	Clinical study on the effect of acupuncture and bee venom acupuncture for patients with chronic whiplash injury	Bee venom	2005
8	Gang J [26]	Case report on stenosis and herniation of the nucleus pulposus treated with bee venom acupuncture therapy	Bee venom	2006
9	Lee GM [36]	Clinical study of carthami-flos herbal acupuncture treatment for cervical disc herniation patients	Carthami-flos	2006
10	Yoon IJ [31]	Effect of jungsongouhyul herbal acupuncture therapy for neck pain patients	Jungsongouhyul	2006
11	An BJ [21]	Effect of bee venom acupuncture therapy for patients with cervical spondylosis	Bee venom	2007
12	Song BY [25]	A clinical study on the effects of sweet bee venom herbal acupuncture for patients with whiplash injury	Bee venom	2007
13	Jang SY [20]	Clinical study of herbal acupuncture for neck pain caused by whiplash injury	Carthami-flos seeds & Juglandis semen	2007
14	Gwon HY [16]	Clinical study on a case of cervical myelopathy with additional scolopendrae corpus pharmacopuncture	Scolopendrae	2007
15	Shin HY [15]	Clinical observation of improvement made by bee venom therapy at cervical hyeopcheokhyeol for a case of upper limb disability caused by cervical disc herniations	Bee venom	2009
16	Park JY [35]	Clinical effects of carthami-flos pharmacopuncture on posterior neck pain of menopausal women	Carthami-flos	2010
17	Woo JH [19]	Clinical study comparing the effects of chuna treatment and ouhyul herbal acupuncture for patients with cervical pain caused by traffic accidents	Ouhyul	2011
18	Lim JK [33]	Effects of acupuncture therapy in combination with soyeom pharmacopuncture therapy for acute whiplash injuries caused by traffic accidents	Soyeom	2011
19	Lee SJ [29]	Facet joint bee venom acupuncture for 10 patients with whiplash injuries	Bee venom	2011
20	Gang JH [23]	Retrospective comparative study of bee venom pharmacopuncture therapy in patients with a cervical herniated intervertebral disc	Bee venom	2011
21	Lim KM [34]	Effects of soyeom and jungsongouhyul pharmacopuncture on whiplash injuries caused by traffic accidents	Jungsongouhyul	2012
22	Lee JS [18]	Comparative study on the effect of pharmacopuncture treatment, chuna treatment, pharmacopuncture -chuna combined treatment for neck pain caused by traffic accidents	Jungsongouhyul	2012
23	Lee JH [17]	Comparative study on the effect of pharmacopuncture treatment and chuna treatment for neck pain caused by traffic accidents	Hwangryunhaedok-tang	2012
24	Kim TH [13]	(A) retrospective study on the effects of shinbaro pharmacopuncture and jungsongouhyul pharmacopuncture on whiplash injuries caused by traffic accidents	Shinbaro & Jungsongouhyul	2013
25	Park SH [12]	Comparative study on the effect of bee venom pharmacopuncture treatment and hwangryun pharmacopuncture treatment of cervical disc herniation	Bee venom & Hwangryun	2013

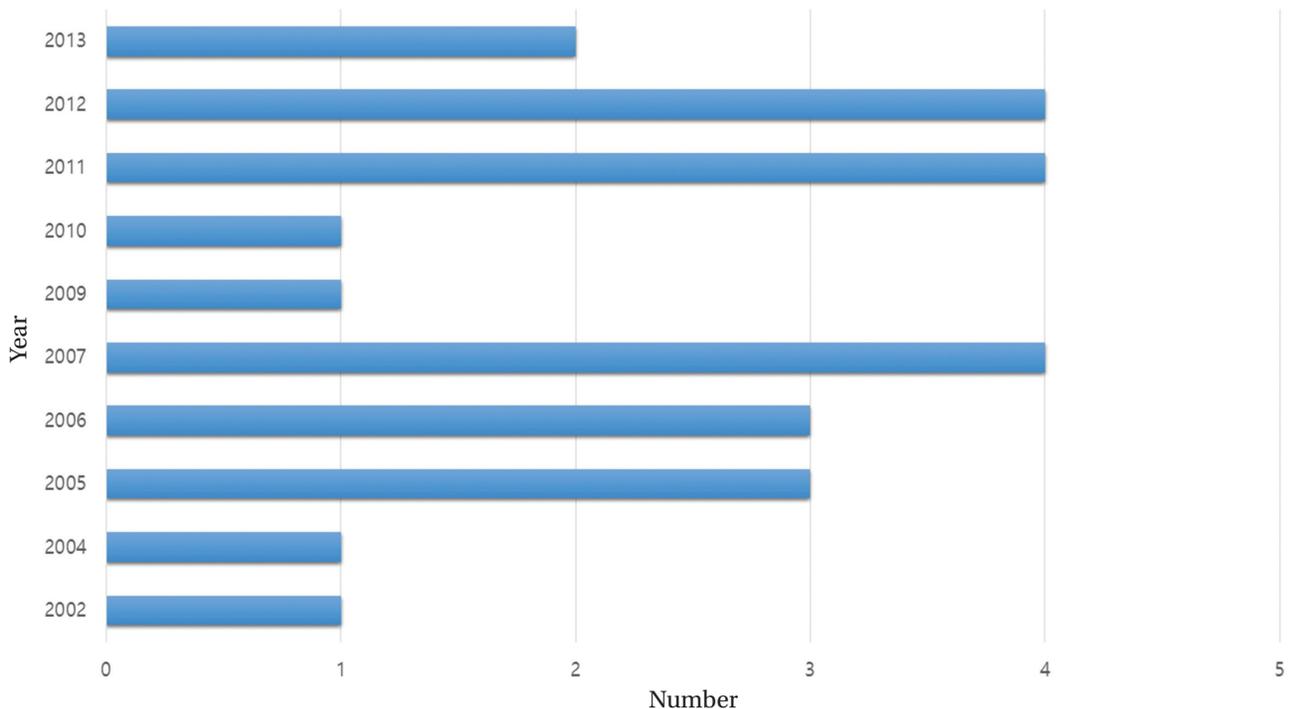


Figure 1 Variations in pain during the treatment period.

an Acupuncture & Moxibustion Society, 3 came from the Journal of the Pharmacopuncture Institute, and 3 came from the Journal of the Korean Academy of Oriental Rehabilitation Medicine. In addition, two each came from the Institute of Oriental Medicine Studies of Daejeon University and the Association of Spine & Joint Korean Medicine, and 1 each came from the Korean Journal of Acupuncture, the Korean Association of Oriental Medicine Information, the Korea Institute of Oriental Medicine, and the Journal of the Korean Association of Sports Oriental Medicine (Fig. 3).

Each thesis was analyzed for the effect of pharmacopuncture therapy in treating cervical pain. The studies by Lee *et al* [14], Shin *et al* [15], and Gwon *et al* [16] showed a significant decrease when using then Japanese Orthopedic Association Score (JOA score) as an assessment scale for cervical pain. Among them, in the studies by Lee *et al* [14] and Shin *et al* [15], Bee venom pharmacopuncture was used; in the study by Gwon *et al* [16], Scolopendra pharmacopuncture was used. Among the selected theses, in the studies by Park *et al* [12], Lee *et al* [17], Lee *et al* [18], Woo *et al* [19], Jang *et al* [20], and Kim *et al* [13], the effect of pharmacopuncture for treating cervical pain was investigated through RCTs. For example, in the studies by Park *et al* [12] and Kim *et al* [13], the results achieved using Hwangryun pharmacopuncture and Bee venom pharmacopuncture were compared, as were the results achieved using ShinBaro pharmacopuncture and Ouhyul pharmacopuncture. In those two studies, Bee venom pharmacopuncture and ShinBaro pharmacopuncture were more effective. In a study by Lee *et al* [17], Chuna manual medicine and Hwangryunhaedok-tang pharmacopuncture were compared to each other. For the first two weeks, both were effective, but

after that, Chuna manual medicine was more effective.

The study by Lee *et al* [18] included groups treated with Chuna manual medicine, Ouhyul pharmacopuncture, and Chuna manual medicine combined with Ouhyul pharmacopuncture. In that study, Chuna manual medicine combined with Ouhyul pharmacopuncture was a little more effective. In a study by Woo *et al* [19], the improvements in the group that received acupuncture therapy combined with Chuna manual medicine and in the group that received acupuncture therapy combined with Ouhyul pharmacopuncture were compared. Significant improvements were seen in both groups, but difference in improvements between the two groups was not large. In the studies by An *et al* [21] and Kim *et al* [22], a group that received Bee venom pharmacopuncture therapy and a group that received electroacupuncture were compared. Here, the group that received Bee venom pharmacopuncture therapy showed better effective. In the study by Jang *et al* [20], the acupuncture group was compared with the group that received acupuncture combined with Carthami-flos seeds and Juglandis semen pharmacopuncture. The result showed that acupuncture combined with pharmacopuncture was more effective.

In a study of Bee venom pharmacopuncture by Gang *et al* [23], a group with Bee venom pharmacopuncture therapy and a group with acupuncture were compared after two treatments. In the group that received Bee venom pharmacopuncture therapy, the visual analogue score (VAS) ranged from 7.2 ± 0.44 (index) to 1.5 ± 0.36 (index); however, in the group that received acupuncture, the VAS ranged from 6.4 ± 0.46 (index) to 4.0 ± 0.56 (index).

In a study by Park *et al* [24], in the group that received Bee venom pharmacopuncture therapy, the average re-

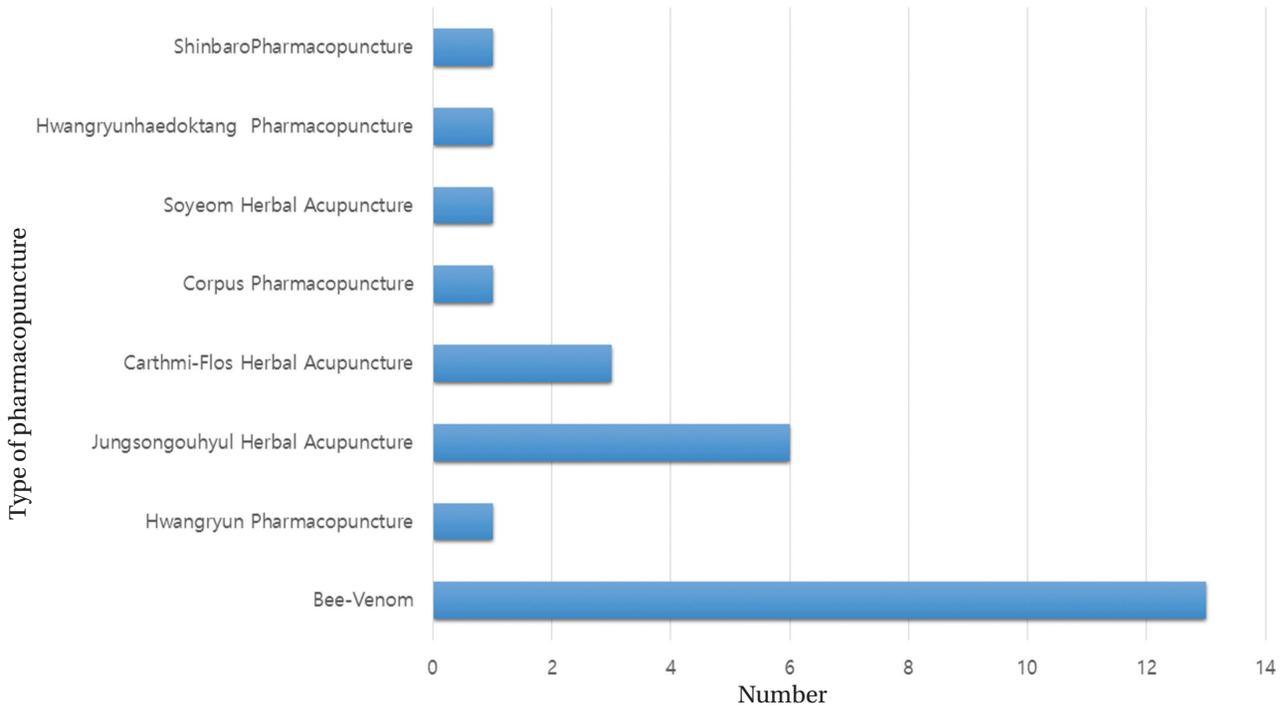


Figure 2 Analysis by type of pharmacopuncture.

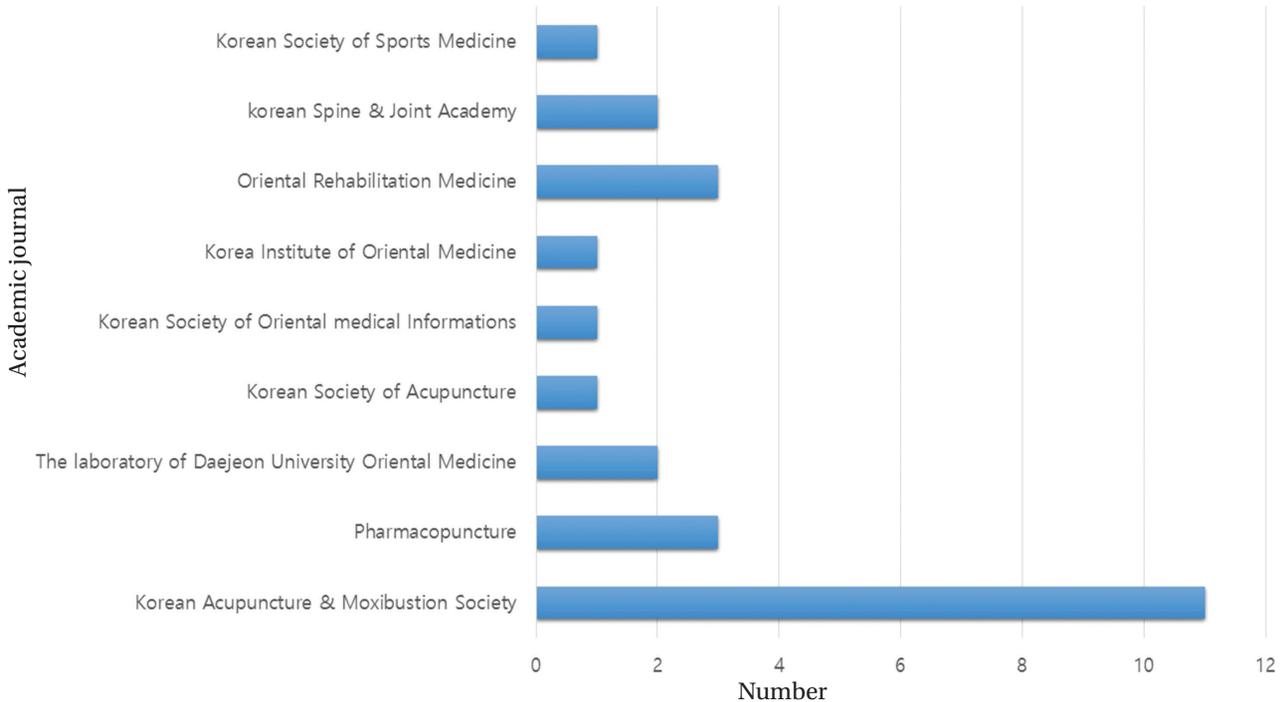


Figure 3 Analysis by academic journal.

response-to-treatment time was 12.3 days while in the acupuncture group, it was 15.6 days. In a study by Song [25], after five treatments, VAS changes were -4.60 ± 1.50 in the Bee venom pharmacopuncture group and -2.30 ± 1.34 in the normal saline group, so Bee venom pharmacopuncture was more effective. In a study by Gang and Song

[26], the group that underwent Bee venom pharmacopuncture therapy and the group that received acupuncture combined with Bee venom pharmacopuncture were compared, and the levels of pain and the rates of improvement for the two groups were similar 5 days later. However, 10 days later, the group that received acupuncture combined

with Bee venom pharmacopuncture showed a better result than the group that received only the Bee venom pharmacopuncture. Also, in the studies by Gang *et al* [27], Choi *et al* [28], Lee *et al* [29], and Kim *et al* [30], Bee venom pharmacopuncture was reported to be effective for treating cervical pain.

In the studies by Yoon [31] and Seol *et al* [32], Ouhyul pharmacopuncture was effective for treating cervical pain. In the study by Yoon [31], Ouhyul pharmacopuncture and normal saline were used to treat posterior cervical patients. In both groups, the VAS was significantly lower, but the Ouhyul pharmacopuncture group had the better result. In a study by Lim *et al* [33], in the Soyeom pharmacopuncture group five treatment later, the VAS change was from 6.375 ± 1.302 to 2.250 ± 0.886 and the Neck Disability Index (NDI) change was from 21.75 ± 6.390 to 9.00 ± 4.956 , both results being statistically significant. In a study by Lim *et al* [34], patients with posterior neck pain due to whiplash injuries caused by traffic accidents were treated with Ouhyul pharmacopuncture and with Soyeom pharmacopuncture, but no statistically significant results for the pre-post difference index (VAS NDI Short-Form McGill Pain Questionnaire) were reported. Finally, in a study by Park *et al* [12], the patients positive on the Spurling Test were treated with pharmacopuncture therapy for 2 weeks; in 66.66% of the Bee venom pharmacopuncture group, pain disappeared while it disappeared in only 40% of the Hwangryun pharmacopuncture group.

As a result of analyzing clinical theses involving the use of pharmacopuncture for treating diseases in cervical area according to the type of pharmacopuncture used by publication year, 9 out of the 13 clinical theses related to pharmacopuncture released before 2007 were theses involving the use of Bee venom pharmacopuncture. However, after 2007, of the 12 clinical theses involving the use of pharmacopuncture to treat cervical pain, only 4 used Bee venom pharmacopuncture. This shows that the type of pharmacopuncture is changing from Bee venom pharmacopuncture to Ouhyul pharmacopuncture, Carthami-flos pharmacopuncture, Hwangryunhaedok-tang pharmacopuncture, etc.

4. Discussion

These days, many people complain of cervical pain caused by excessive job, stress, etc. Thus, it has become necessary to actively study about the treatment of cervical pain in Oriental medicine. In Oriental medicine, many treatments are used for cervical pain: for example, acupuncture therapy, herbal medicine, pharmacopuncture, chuna manual medicine therapy, electroacupuncture. Among them, pharmacopuncture therapy combines existing meridian channel theory with the efficacy of herbal medicine. As efficacy of pharmacopuncture therapy is excellent, its use is on the rise, and the types of pharmacopuncture are increasing. For those reasons, Lee *et al* [10], Cho *et al* [11], Kim *et al* [9], and Han *et al* [8] performed studies according to the type of pharmacopuncture: for example, Hominis placenta pharmacopuncture, Scolopendra pharmacopuncture, Bee venom pharmacopuncture. However, studies

according to cervical disease are still short. For this reason, the authors investigated the use of pharmacopuncture therapy for treating cervical pain.

Objects for search were original copies and abstracts of theses listed in a database or published until July 2014. The search was made on OASIS the NDSL, and the Korean traditional knowledge portal. Search words were connected with cervical pain disease and symptoms. The number of reports in the literature that were searched by using the above method totaled 1594. Finally, 25 clinical theses related to pharmacopuncture were selected. Among the 25 selected theses, 13 (52%) used Bee venom pharmacopuncture. Thus, clinical studies using Bee venom pharmacopuncture to treat cervical disease were in a slight majority.

By academic journal in which the selected theses were published, 11 came from the Korean Acupuncture & Moxibustion Society, which accounted for 44% of the total and ranked No. 1, and 3 each came from the Journal of the Korean pharmacopuncture Institute and the Journal of the Korean Academy of Oriental Rehabilitation Medicine, which accounted for 12% of the total and ranked No. 2.

Also, among the 25 selected theses, 16 involved RCTs. Of these 16, 8 compared a pharmacopuncture group to an acupuncture combined with pharmacopuncture group, and the acupuncture combined with pharmacopuncture group showed a better result than the pharmacopuncture group. In the study by Kim *et al* [13], ShinBaro pharmacopuncture was more effective than Ouhyul pharmacopuncture. In the study by Park *et al* [12], Bee venom pharmacopuncture was more effective than Hwangryun pharmacopuncture, but in the study by Lim *et al* [34], there was no difference between Ouhyul pharmacopuncture and Soyeom pharmacopuncture when treating patients with whiplash injuries caused by traffic accidents. In comparing chuna with pharmacopuncture, in a study by Woo *et al* [19], there was no difference between the acupuncture combined with chuna group and the acupuncture combined with pharmacopuncture group.

As a result of examining the recent trend in pharmacopuncture used to treat disease in the cervical area, we found that the main study theme before 2008 was Bee venom pharmacopuncture. However, from 2008, the type of pharmacopuncture has been changing from Bee venom pharmacopuncture to Ouhyul pharmacopuncture, Carthami-flos pharmacopuncture, Hwangryunhaedok-tang pharmacopuncture, etc. This means that clinical researchers are highly interested in various types of pharmacopuncture, but still there are not enough studies to confirm the effect pharmacopuncture. Thus, in the future, many studies are needed to identify the most effective pharmacopuncture treatments, along with their type, volume, procedure region, and number of treatments, and it is our hope that many such reports actually be published.

5. Conclusion

By analyzing theses related to cervical pain published in journals of academic institutes for Korean medicine, we were able to draw the following conclusions:

1. Pharmacopunctures used for cervical pain were phar-

macopunctures used for cervical pain were Bee venom pharmacopuncture, Carthami-flos pharmacopuncture, Scolopendra pharmacopuncture, Ouhyul pharmacopuncture, Hwangryun pharmacopuncture, Corpus pharmacopuncture, Soyeom pharmacopuncture, Hwangryunhaedoktang pharmacopuncture, Shinbaro pharmacopuncture.

2. As a result of a RCT study, a group treated with pharmacopuncture therapy combined with another method showed effective results.

3. In the past, Bee venom pharmacopuncture oriented studies were actively pursued, but the number of studies on various types of pharmacopuncture has been gradually increasing.

4. For treating a patient with cervical pain, the type of pharmacopuncture to be used should be selected based on the cause of the disease and the patient's condition.

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Conflict of interest

The authors declare that there are no conflict of interest.

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